REPORT

of the

SAN FRANCISCO WATER DEPARTMENT

FISCAL YEAR

1966-1967

ARTHUR H. FRYE, JR.
General Manager and Chief Engineer

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REPORT FOR FISCAL YEAR
JULY 1, 1966 TO JUNE 30, 1967

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SAN FRANCISCO WATER DEPARTMENT

ARTHUR H. FRYE, JR.
General Manager and Chief Engineer

San Francisco's early growth required the City to become the first importer of water into the Bay Area and it is still the only importer within much of the area presently served by the Water Department. The later growth of former suburban areas into cities surrounded by new suburban areas has caused water consumption to reach a new high of 215 million gallons per day average for 1966-67. Consumption outside the City averaged 112 MGD, with 103 MGD being used in the City.

The Water Department was created to take over the operations and properties of the Spring Valley Water Company when that private water utility was purchased by the City on March 3, 1930. As a result of this initial purchase, the Water Department owns and operates watersheds, reservoirs and transmission facilities, and serves customers in Alameda, Santa Clara and San Mateo Counties as well as in San Francisco. Facilities thus purchased, plus later additions to serve the increasing population within this area, include 63,000 acres of watershed and other lands; five impounding and/or storage reservoirs with a total capacity of 77,000 million gallons (over a year's supply); 1,315 miles of transmission and distribution mains; 13 city distribution reservoirs with a total capacity of 400+ million gallons; 157,470 meters to record deliveries of water to serve an estimated 2,000,000 people. Water is metered to individual consumers within San Francisco and is metered to water purveyors outside San Francisco who, in turn, distribute and meter to their individual customers.

As an operating utility the Department must comply with the standards set by appropriate State and Federal agencies within the restrictions established by Charter and the will of the electorate that voted for fluoridation of their water supply and who, in the final analysis, must approve bond issues for major capital expenditures. It is interesting to note that the largest bond issue ever undertaken by San Francisco was approved by a vote of more than 11 to 1 when the $115,000,000 Water Improvement Bonds were voted upon November 7, 1961.

The objectives of this Department are to deliver to all consumers a safe potable water in adequate amounts and at adequate pressures with accurate measurement, proper billing and collection through the efficient operation and maintenance of all facilities (some of which are more than 100 years old), and the continuing planning and construction of replacements and additions necessary to provide for the present and future needs of the approximately two million people now being served in the City and the more rapidly growing Peninsula and South Bay areas.

Waterwise 1966-67 was a very good year. Rainfall measured at Water Department gaging stations on the Peninsula watersheds averaged 123% of normal and stations on the Alameda watersheds averaged 139% of normal. Only two seasons (1957-58 and 1951-52) within the last 25 years had more rainfall.

Three major series of storms, one of "50-year intensity," resulted in the useful production of water equal to 102 million gallons per day for the fiscal year. Of this production 3,428 million gallons (equal to 9.4 MGD for the year) was stored by transferring from Calaveras reservoir to San Antonio reservoir water that otherwise would have been wasted as additional spill over Calaveras dam. At our minimum rate for water this transferred water is worth $555,000.

Calaveras reservoir spilled for the seventh time in the 42 years since its construction. Between April 3 and May 12, 9,746 million gallons of water was wasted through the spillway. The "wettest June ever" caused San Andreas reservoir to spill slightly and Crystal Springs reservoir spilled for the ninth time since it was built in 1890. A total of 106 million gallons was wasted between June 15 and 19 from Crystal Springs reservoir.

On June 30, 1967, water stored in Alameda and Peninsula reservoirs totaled 68,903 million gallons which is approximately 145% of the ten-year average storage on June 30 each year.

In order to deliver water of uniformly high quality to our customers, Sunol Valley Filtration Plant, which started test operations in June 1966, was officially dedicated on September 14, 1966, with Stewart L. Udall, Secretary of the Interior, Governor Brown and Mayor Shelley as key speakers. All water from Alameda sources is now filtered before entering the transmission aqueduct. Thus customers in Alameda County, northern Santa Clara County and southern San Mateo County receive a mixture of clean mountain water and filtered Alameda water. In order to deliver this same high quality water to customers in San Francisco and northern San Mateo County, a contract for construction of Crystal Springs Bypass Tunnel was awarded in August 1966 and construction was 46% complete at the end of the fiscal year. The total bid price of $8,616,850 was funded from 1961 Bond Fund. San Andreas Filtration Plant design is complete; however, delays in settlement of the routing of Junipero Serra Freeway and the expected payments for the rights-of-way for this freeway have delayed construction of this plant.

In order to deliver an adequate amount of water at adequate pressures, Bay Division Pipeline No. 4, Section A, 8-1/2 miles of 8-foot-diameter pipe, and the third siphon across Alameda Creek were completed and put into service; the 5-foot-diameter pipe connecting San Antonio reservoir to San Antonio pumping station and Sunol pumping plant to these facilities were completed. The two

pumping stations for these lines were 83% completed at the end of the fiscal year. Funds for these projects were from 1961 Bonds. A total of 6,325 old, rusted or inadequate service pipes were replaced during the year and 7.3 miles of new or replacement water mains were installed to improve the quantity and/or pressure of water delivered.

In order to maintain proper recording of water sold, a total of 6,734 meters were changed during 1966-67.

Gross water sales for 1966-67 amounted to $20,252,548; this includes water valued at $1,185,320 delivered to other San Francisco City and County municipal departments, for which no payment is received.

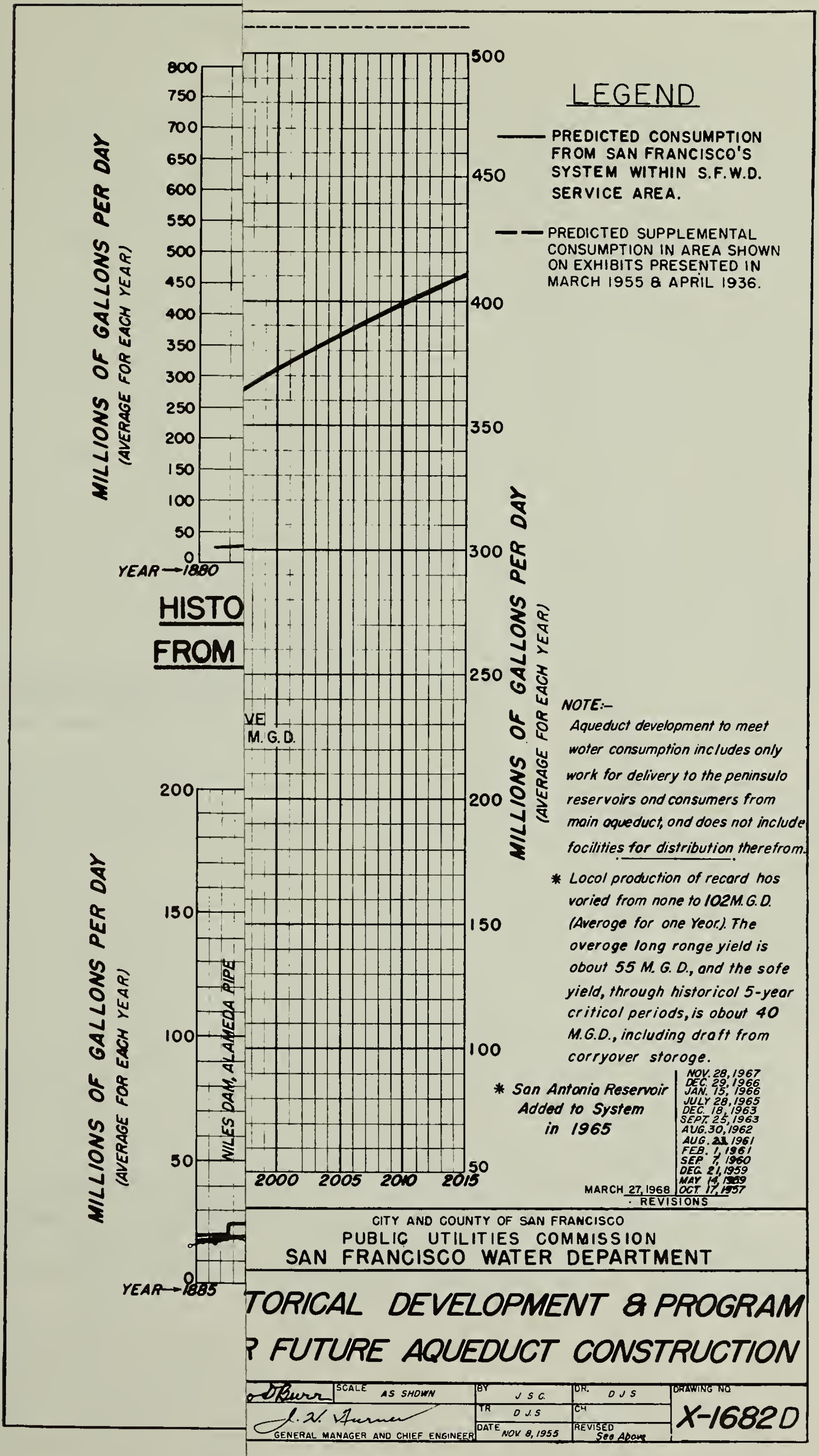
The miscellaneous income of the Department from sale of lands, rentals, interest earned, agricultural operations, etc., totaled $1,503,475, making a net income of $19,759,808 for the year.

In planning for the future needs of present and future customers the Department has three professional service agreements with consultants for: 1) land use study of all Water Department properties, to determine the best uses of these lands compatible with their primary function of providing water supply; 2) water supply studies to determine the future water needs of present and potential service area, and a program of system improvements and replacements needed to meet these needs; 3) Pleasanton Industrial Park to establish the best methods of development of this property. Preliminary reports have been received on some of these and final reports will be forthcoming.

An overall improvement in the efficient operation of the Department is reflected by the Department's qualifying for the American Water Works Association "Award of Honor" for the first time. This award resulted from having only 13 lost-time injuries in 1,414,784 man hours of work for a frequency of 9.19 accidents per million man hours worked. Specific efforts toward improved safety included a Driver Reaction Test Program followed by a Defensive Driving Training Course in which selected personnel were trained to act as instructors in future training of other employees.

Most problems currently facing the Department revolve around the population increase and the resulting pressure for more highways, freeways, rapid transit, both in the City and on the Peninsula, and the one instance, so far, of civil disturbance. All of the problems impose a burden upon management and staff in addition to the normal departmental functions.

Following are additional details of the Water Department's operations.



LEGEND

——— PREDICTED CONSUMPTION FROM SAN FRANCISCO'S SYSTEM WITHIN S.F.W.D. SERVICE AREA.

— — PREDICTED SUPPLEMENTAL CONSUMPTION IN AREA SHOWN ON EXHIBITS PRESENTED IN MARCH 1955 & APRIL 1936.

NOTE:–

Aqueduct development to meet water consumption includes only work for delivery to the peninsula reservoirs and consumers from main aqueduct, and does not include facilities for distribution therefrom.

* *Local production of record has varied from none to 102 M.G.D. (Average for one Year.) The average long range yield is about 55 M. G. D., and the safe yield, through historical 5-year critical periods, is about 40 M.G.D., including draft from carryover storage.*

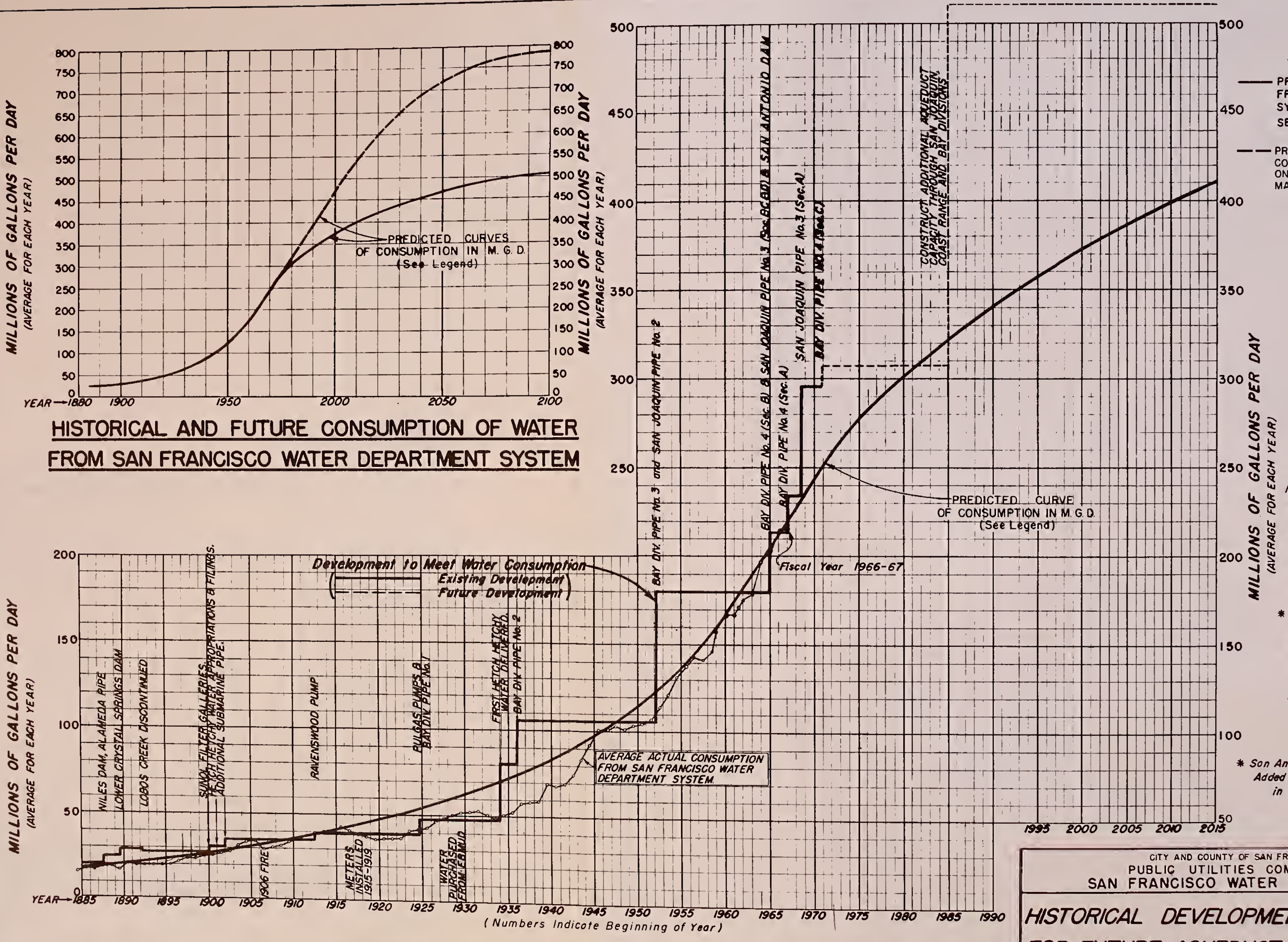
* *San Antonio Reservoir Added to System in 1965*

NOV. 28, 1967
DEC. 29, 1966
JAN. 15, 1966
JULY 28, 1965
DEC. 18, 1963
SEPT. 25, 1963
AUG. 30, 1962
AUG. 23, 1961
FEB. 1, 1961
SEP. 7, 1960
DEC. 21, 1959
MAY 14, 1959
OCT. 17, 1957
MARCH 27, 1968
REVISIONS

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

TORICAL DEVELOPMENT & PROGRAM
R FUTURE AQUEDUCT CONSTRUCTION

SCALE AS SHOWN	BY J S C	DR. D J S	DRAWING NO.
J. H. Turner GENERAL MANAGER AND CHIEF ENGINEER	TR D J S	CH	X-1682 D
	DATE NOV. 8, 1955	REVISED See Above	



HISTORICAL AND FUTURE CONSUMPTION OF WATER FROM SAN FRANCISCO WATER DEPARTMENT SYSTEM

LEGEND

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PUBLIC UTILITIES COMMISSION
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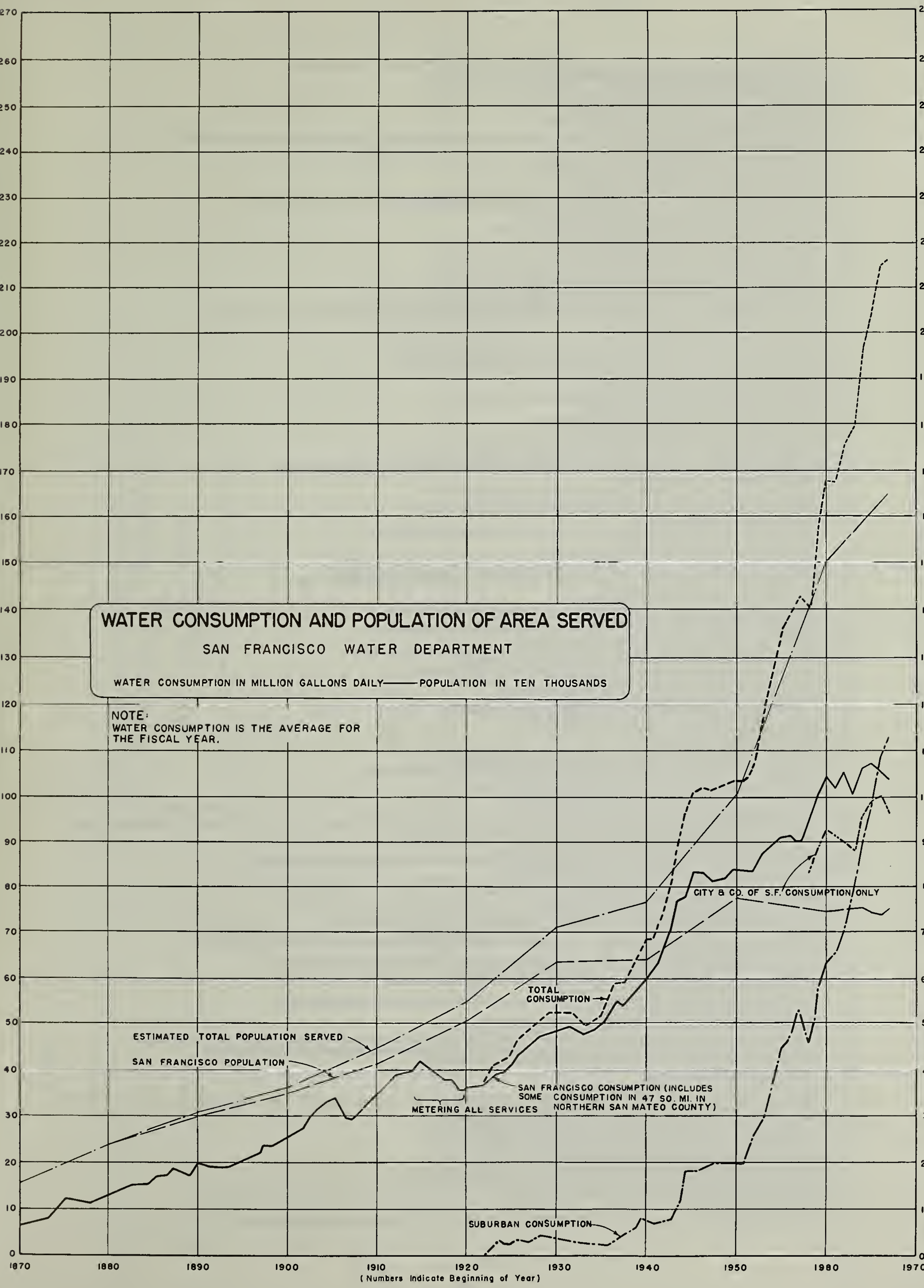
HISTORICAL DEVELOPMENT & PROGRAM FOR FUTURE AQUEDUCT CONSTRUCTION

APPROVED Geo D Burr	SCALE AS SHOWN	BY J. S. G.	CK. D. J. S.	X-1682D
APPROVED J. H. Turner GENERAL MANAGER AND CHIEF ENGINEER		TR D. J. S. DATE NOV 8, 1955	CK REVISE See Above	

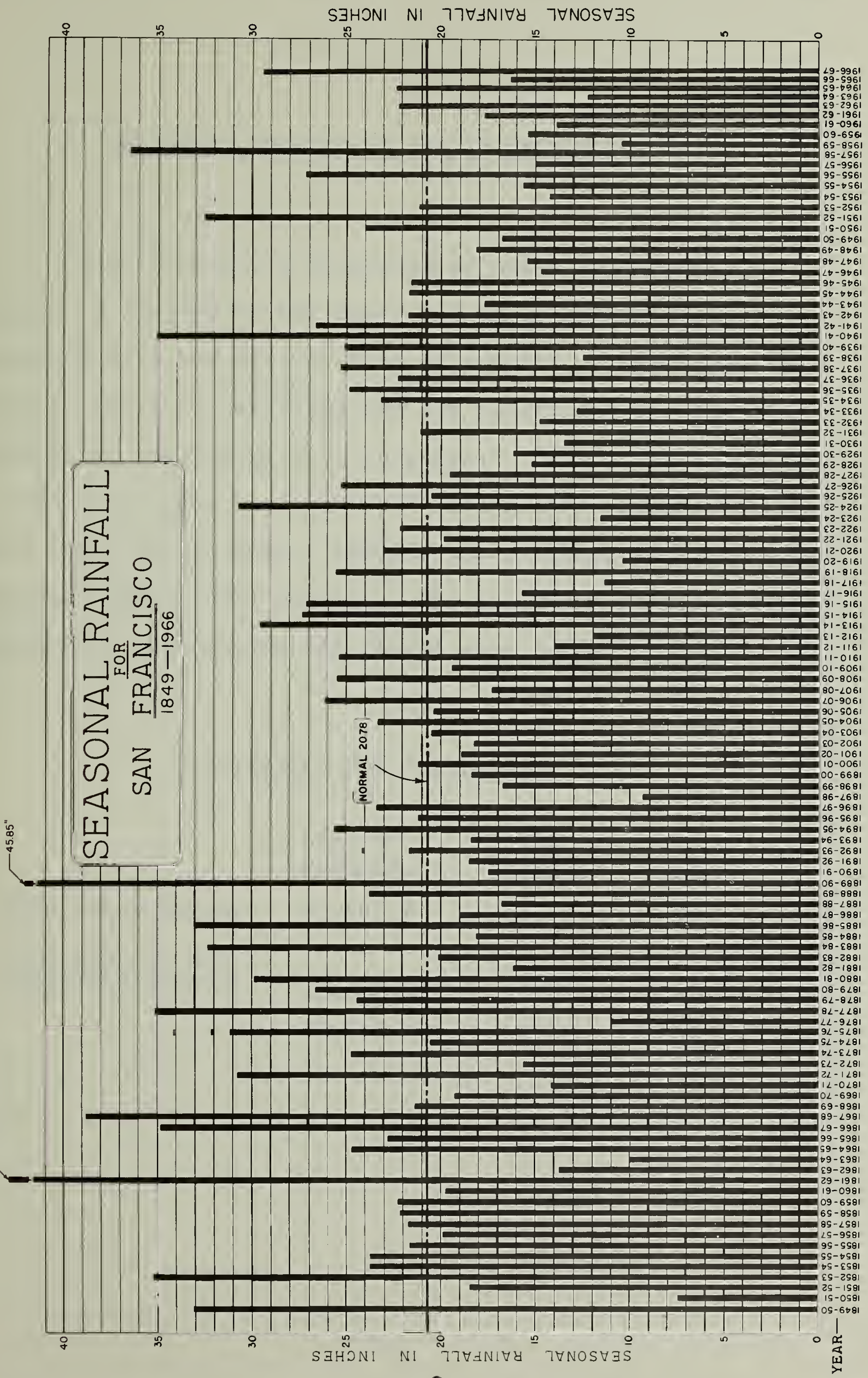


WATER CONSUMPTION AND POPULATION OF AREA SERVED

SAN FRANCISCO WATER DEPARTMENT

WATER CONSUMPTION IN MILLION GALLONS DAILY——POPULATION IN TEN THOUSANDS

NOTE:
WATER CONSUMPTION IS THE AVERAGE FOR THE FISCAL YEAR.


SEASONAL RAINFALL
FOR
SAN FRANCISCO
1849—1966
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45.85"
NORMAL 2078
SEASONAL RAINFALL IN INCHES
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35
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1966-67

DELIVERY, PRODUCTION AND TRANSMISSION

San Francisco's diversion of water from mountain sources is limited by the Raker Act to an amount that, "together with the waters which it now has or may hereafter acquire, shall be necessary for the beneficial use for domestic or other municipal purposes." "The water which it (San Francisco) has acquired" varies with climatic conditions from year to year. 1966-67 was a record year for water production from local sources. The following tables provide statistical information for fiscal year 1966-67.

DELIVERIES FOR CONSUMPTION

	Million Gallons	MGD Average	%
From Hetch Hetchy	67,663.8	185.4	86.1
From Alameda and Peninsula Sources	10,954.2	30.0	13.9
	78,618.0	215.4	100.0

RAINFALL

Gaging Stations	1966-67	Comparison to Normal
Calaveras (Alameda Co.)	30.42 inches	139%
Crystal Springs Cottage (San Mateo Co.)	34.75 "	132%
Pilarcitos (San Mateo Co.)	52.66 "	118%
San Andreas(" " ")	46.19 "	126%

WATER PRODUCTION

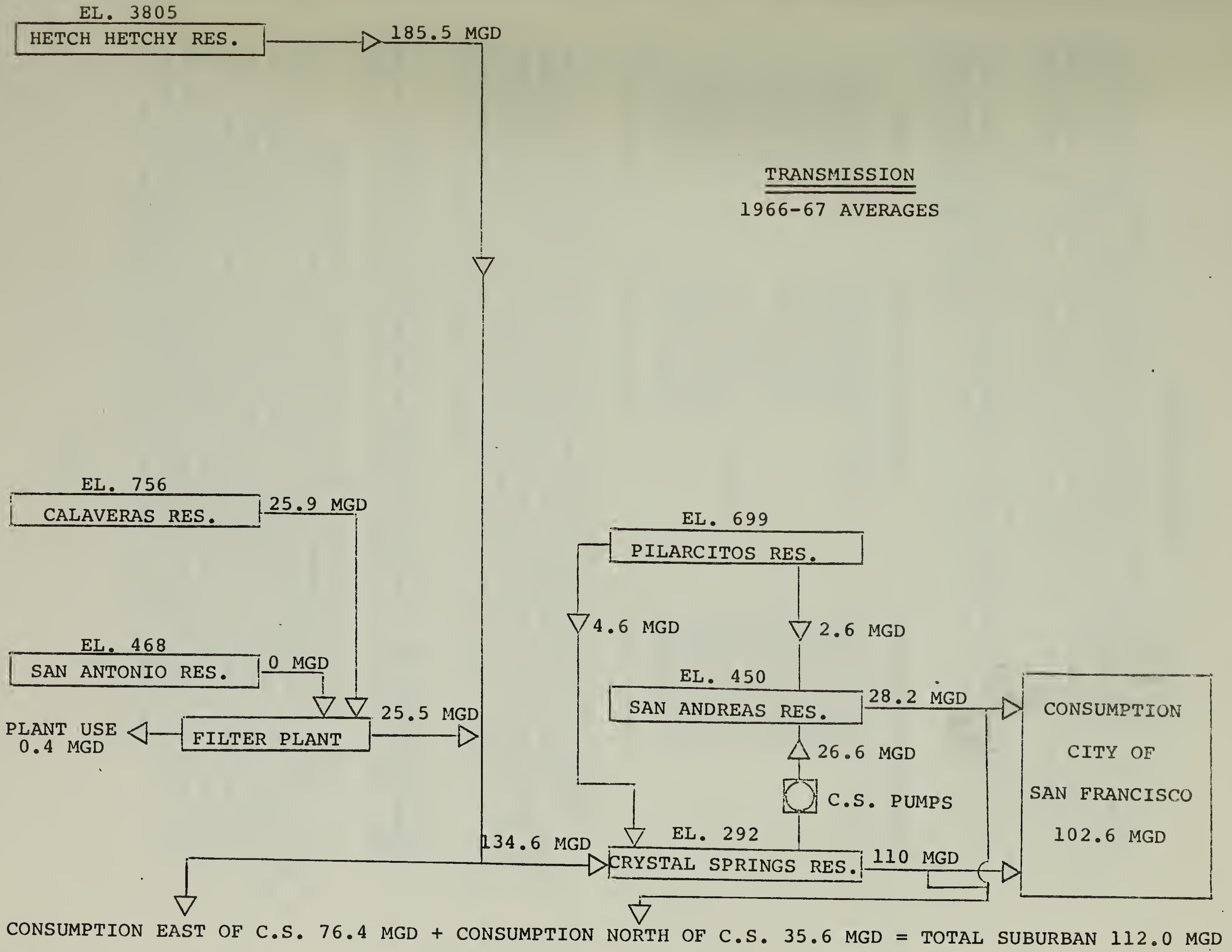
	1965-66		1966-67	
	MG	MGD Average	MG	MGD Average
Calaveras (Alameda Co.)	3,986.3	10.9	23,975.6	65.7
San Antonio (" ")	537.0	1.5	4,751.0	13.0
Other Sources (" ")	1,666.6	4.5	2,567.9	7.0
Crystal Springs (San Mateo Co.)	1,762.7	4.8	5,407.2	14.8
Pilarcitos (" " ")	1,232.9	3.4	2,727.0	7.5
San Andreas (" " ")	13.4	0.1	380.1	1.1
TOTAL	9,198.9	25.2	39,808.8	109.1

WATER STORAGE

	7-01-66	6-30-67	Minimum		Maximum	
	MG	MG	Date	MG	Date	MG
Calaveras	18,139	29,362	11-15-66	14,364	4-22-67	32,404
San Antonio	3,467	11,646	11-06-66	3,242	5-24-67	11,667
Crystal Springs	14,841	20,941	11-04-66	11,508	6-21-67	21,446
Pilarcitos	797	891	12-14-66	496	1-31-67	931
San Andreas	4,435	6,064	8-05-66	4,267	6-03-67	6,210
TOTAL	41,679	68,904				

TRANSMISSION

1966-67 AVERAGES



WATER RIGHTS

In accordance with the 1916 and subsequent 1936 and other Alameda County Water District Agreements, the Department released water for replenishment of the underground supply of the Niles Cone. The total release entering Niles Cone during 1966-67 is tentatively estimated by this Department to have been 163.4 million gallons.

The quantities of water due the District and the quantities released by the Water Department to the District for replenishing the underground waters for each of the past ten years prior to 1966-67 are as follows:

Year	Due the District		Released to District	
1952-53	757,955,000	Gallons	1,507,419,000	Gallons
1953-54	501,614,000	"	1,251,654,000	"
1954-55	747,020,000	"	722,995,000	"
1955-56	222,850,000	"	989,290,000	"
1956-57	403,850,000	"	1,538,450,000	"
1957-58	None		410,150,000	"
1958-59	284,585,000	Gallons	1,069,080,000	"
1959-60	239,766,000	"	694,682,000	"
1960-61	164,730,000	"	669,039,000	"
1961-62	160,873,000	"	692,974,000	"
10 Year Total	3,483,243,000	"	9,545,729,000	"

For fiscal years 1962-63 thru 1966-67 the United States Geological Survey has not yet completed its computation of the quantity of water "Due to District" or "Released to District" since complications in the computation ensue from the fact that South Bay Aqueduct water is flowing down Niles Canyon and is therefore mixed with natural flows and the portion of San Francisco's water releases that also flow down Niles Canyon.

The net accumulated advance release to the Alameda County Water District in accordance with the terms of the 1936 agreement amount to the 32,367 million gallons reported as of June 30, 1962.

The Sheriff of Alameda County continued to use the U. S. Navy's "Camp Shoemaker" as "Santa Rita Rehabilitation Center" during the fiscal year. Water supplied to this institution, as well as to the former Naval Housing Project, Komandorski Village and Camp Parks, was taken by the U. S. Government from the 4.105 acre tract within the Pleasanton Township County Water District. The withdrawal of ground waters for such purposes varied from a high of 2.04 million gallons to a low of 0.19 million gallons per day on days when they pumped. The pumps operated throughout the year four or five days per week, averaging 821,174 gallons per day for the year.

The high water table for this year in the Pleasanton Well Field, as measured in Well No. W103X, was 119.8 occurring in September 1966. This water level is 8.9 feet lower than the high water level of last year as measured at this well.

During the fiscal year, the tenants on the City's Well Field property near Pleasanton pumped about 385 million gallons of water from City owned wells for irrigation of this leased property.

During this fiscal year, the lessees on Department lands bordering Laguna and Alameda Creeks at Sunol used for irrigation about 36 million gallons of water pumped directly from these creeks.

In the City of San Francisco, the City Recreation and Park Department pumped 307 million gallons of water from Lake Merced, Harding Park and Golden Gate Park wells.

WATER QUALITY AND TREATMENT

Sunol Valley Filtration Plant, the first filtration plant in the City's water system, was officially dedicated on September 14, 1966. The Water Department and its predecessor, the Spring Valley Water Company, supplied safe water to consumers for more than 100 years by protecting the reservoirs and watershed lands from contamination and pollution. However, the increasing demand for water has made it necessary to be able to use water from Calaveras reservoir the year around. This water becomes turbid during periods of heavy runoff from winter rains, making filtration necessary to assure such year round availability. This plant will also treat all water used from San Antonio reservoir before it enters the transmission system. During the year the plant treated 8,838.4 million gallons of water ranging in turbidity from less than one unit to 1,500 units. A total of 1,969 pounds of polyelectrolite, 2,627,278 pounds of alum and 35,893 pounds of sodium silicate was used for turbidity removal; 438,060 pounds of lime were used for pH adjustment; and 94,879 pounds of chlorine were used for disinfection of the filtered water.

Customary procedures for the treatment of the San Francisco water supply were employed during the year and proper precautions were taken to insure its safety and purity. Disinfection of all supplies was continuous and water served to consumers complied with the bacteriological standards for drinking water established by the United States Public Health Service.

Dissolved chemical content of the supply sources varies from a soft mountain water to that of a relatively hard ground water. The mountain water constitutes the principal source of supply and requires treatment for the control of its corrosive properties. It is combined in varying proportions with the harder water from other sources and is soft to moderately soft when served to consumers. The water is generally free from tastes and odors and the quality is good for an unfiltered supply derived primarily from surface sources.

LABORATORY:

All analytical work in the fields of biological bacteriology and chemistry, except the necessary field tests, was performed in our laboratory located at Millbrae which has been certified by the State Department of Public Health as an "Approved Water Laboratory for Complete Chemical and Complete Bacteriological Analyses."

INSPECTIONS:

Periodic sanitary inspections of the watersheds were made to insure the protection of the water supply. In addition, the

Purification Division Manager, accompanied by representatives of the United States Public Health Service, made an inspection of the sewage treatment facilities at Tuolumne Meadows in Yosemite National Park.

During the month of August the Department of the Interior awarded a contract for the construction of a sewage treatment plant at Tuolumne Meadows in Yosemite National Park. This plant will safeguard the City's water supply from potential pollution in this area.

CHLORINATION:

Normal water treatment practices for safeguarding the San Francisco water supply were in force throughout the year. Disinfection of all supplies was continuous. A total of 2,484,835 pounds of chlorine was used during the year at the various chlorination stations.

DECHLORINATION:

A total of 193,014 pounds of sulfur dioxide was used during the year to partially dechlorinate water drawn from the sources that required high dosages of chlorine to control bacteriological quality.

FLUORIDATION:

Except for brief shutdowns for maintenance, repairs and adjustments, all water leaving Peninsula reservoirs was fluoridated, other than relatively small quantities delivered to the City of Millbrae through the service connections on the San Andreas Branch and the Sunset Supply Line. A total of 580,700 pounds of sodium silicofluoride and 51,433 pounds of liquid hydrofluosilicic acid was used during the year, with dosages at the operating stations averaging 0.88 milligrams per liter. This amount, added to the natural fluoride content of the water, resulted in an average total fluoride content in the water served to consumers of 0.93 milligrams per liter.

CORROSION CONTROL:

A total of 2,783,707 pounds of lime was added to the water coming from mountain sources to reduce the corrosive tendencies of this soft water.

ALGAE CONTROL:

Each of the storage reservoirs on the Peninsula and Calaveras reservoir received at least one copper sulfate treatment during the year for the control of algae growth. A total of 102,430 pounds of copper sulfate was used for algae control.

COAGULATION:

To remove excessive turbidity from San Andreas Creek water before it enters Crystal Springs reservoir, 422,585 gallons of liquid alum (48.0% aluminum sulfate) were mixed with the runoff waters as needed during periods of total flow.

1966-1967
WATER QUALITY

CRYSTAL SPRINGS PIPELINES

Hardness	Max. 50	Min. 28	Ave. 39 mg/l (2.28 gpg)
Chloride	11	5	7 mg/l
Alkalinity	36	21	27 mg/l
pH	7.5	6.8	7.2
Conductivity	158	91	118 µmhos
Turbidity	20	0	4 TU
Temperature	73°F	49°F	62°F
Dissolved Oxygen	11.0	7.2	9.4 mg/l (97% of Saturation)

SAN ANDREAS PIPELINES

Hardness	Max. 56	Min. 42	Ave. 45 mg/l (2.57 gpg)
Chloride	14	10	11 mg/l
Alkalinity	42	28	38 mg/l
pH	7.6	7.0	7.4
Conductivity	184	134	155 µmhos
Turbidity	15	0	3 TU
Temperature	70°F	48°F	59°F
Dissolved Oxygen	11.4	4.0	10.0 mg/l (99% of saturation)

BAY CROSSING PIPELINE NO. 1

Hardness	Max. 114	Min. 14	Ave. 29 mg/l (1.69 gpg)
Chloride	8	1	3 mg/l
Alkalinity	78	13	24 mg/l
pH	9.7	8.2	9.3
Conductivity	260	52	86 µmhos
Turbidity	9	0	0.5 TU
Temperature	71°F	48°F	59°F
Dissolved Oxygen	14.8	9.4	11.0 mg/l (100% of Saturation)

BAY CROSSING PIPELINE NO. 2

Hardness	Max. 123	Min. 14	Ave. 32 mg/l (1.87 gpg)
Chloride	9	2	3 mg/l
Alkalinity	83	13	26 mg/l
pH	9.7	7.8	9.1
Conductivity	260	52	100 µmhos
Turbidity	6	0	1 TU
Temperature	71°F	48°F	58°F
Dissolved Oxygen	13.4	9.2	11.5 mg/l (100% of Saturation)

BAY CROSSING PIPELINE NO. 3

Hardness	Max. 70	Min. 16	Ave. 24 mg/l (1.40 gpg)
Chloride	8	1	3 mg/l
Alkalinity	49	13	23 mg/l
pH	9.9	8.0	9.0
Conductivity	176	54	82 µmhos
Turbidity	5	0	0.5 TU
Temperature	71°F	45°F	60°F
Dissolved Oxygen	12.8	9.2	10.9 mg/l (100% of Saturation)

SAN FRANCISCO WATER DEPARTMENT
MINERAL ANALYSES
Table I

Source	A Hetch Hetchy Reservoir	B Alameda East Portal (treated water)	C Calaveras Pipe Line (treated water)
Date Sampled	July 12, 1966	July 12, 1966	July 12, 1966
MAJOR CHEMICAL CONSTITUENTS	mg/liter	mg/liter	mg/liter
Cations:			
Calcium (Ca^{++})	0.6	5.4	34.0
Magnesium (Mg^{++})	0.1	0.2	8.8
Sodium (Na^{+})	0.8	1.7	11.0
Potassium (K^{+})	0.2	0.3	1.3
Anions:			
Bicarbonate (HCO_3^{-})	3.9	9.9	128
Carbonate (CO_3^{--})	0.0	3.1	1.3
Carbonic Acid (H_2CO_3)	3.7	0.0	0.0
Chloride (Cl^{-})	0.1	1.0	7.7
Sulfate (SO_4^{--})	0.7	1.2	28.8
Fluoride (F^{-})	0.1	0.1	0.1
MINOR, TRACE, AND NONIONIC CONSTITUENTS			
Aluminum (Al)	0.02	0.05	0.06
Arsenic (As)	<0.001	<0.001	<0.001
Barium (Ba)	<0.1	<0.2	<0.05
Cadmium (Cd)	<0.001	<0.001	<0.001
Chromium (Cr)	<0.001	<0.001	<0.001
Copper (Cu)	0.006	0.001	0.020
Iron (Fe)	<0.02	0.04	0.02
Lead (Pb)	<0.01	<0.01	<0.01
Manganese (Mn)	<0.002	<0.002	0.002
Selenium (Se)	<0.001	<0.001	<0.001
Silver (Ag)	<0.01	<0.01	<0.01
Zinc (Zn)	<0.05	<0.05	0.08
Silica (SiO_2)	3.6	5.0	4.1
Ammonia (Albuminoid-NH_3)	0.4	0.05	0.15
Ammonia (Free-NH_3)	0.03	0.15	0.02
Boron (B)	<0.01	<0.01	0.01
Cyanide (CN^{-})	<0.003	<0.003	<0.003
Nitrate (NO_3^{-})	<0.1	0.4	<0.1
Nitrite (NO_2^{-})	<0.004	<0.004	<0.004
Phosphate ($PO_4^{\equiv}$)	<0.01	<0.01	<0.01
Tannins & Lignins	0.15	0.04	0.06
Phenol	<0.001	<0.001	<0.001
Dissolved Oxygen (O_2)	8.2	10.6	10.9
Detergent	<0.01	<0.01	<0.01
Chemical Oxygen Demand	2.7	1.3	4.3
DERIVED VALUES			
Hardness as $CaCO_3$	2.0	14.3	122
Alkalinity as $CaCO_3$	3.2	13.2	108
Total Solids:			
Residue at 200°C	12.1	28.8	155
Organic Matter (Loss at 600°C)	4.8	8.6	48
PHYSICAL MEASUREMENTS			
Conductivity (Micromhos/CM)	5	54	230
pH	6.4	9.8	8.2
Turbidity (units)	0.5	0.0	0.0
Color (units)	5	5	5
Radioactivity (micromicrocuries/liter ± 90%)			
Alpha	0.3 ± 0.4	0.7 ± 0.4	1.0 ± 0.9
Beta	2.0 ± 2.7	7 ± 5	3 ± 9

NOTE: All values are below the recommended limits given in the "Public Health Service Drinking Water Standards 1962."

SAN FRANCISCO WATER DEPARTMENT
MINERAL ANALYSES
Table II

	D	E	F
Source	Crystal Springs Lines	San Andreas Lines	Stone Dam Reservoir
Date Sampled	July 14, 1966	July 14, 1966	July 14, 1966
MAJOR CHEMICAL CONSTITUENTS	mg/liter	mg/liter	mg/liter
Cations:			
Calcium (Ca^{++})	11.9	14.0	37.7
Magnesium (Mg^{++})	2.7	4.3	5.1
Sodium (Na^+)	5.0	7.5	17.0
Potassium (K^+)	0.6	0.2	1.0
Anions:			
Bicarbonate (HCO_3^-)	37.6	50.0	129
Carbonate (CO_3^{--})	0.0	0.0	0.0
Carbonic Acid (H_2CO_3)	0.0	0.0	0.0
Chloride (Cl^-)	6.5	10.0	25.0
Sulfate (SO_4^{--})	7.9	9.3	11.0
Fluoride (F^-)	0.8	0.9	0.2
Minor, Trace and Nonionic Constituents			
Aluminum (Al)	0.02	0.02	0.10
Arsenic (As)	<0.001	<0.002	<0.001
Barium (Ba)	<0.2	<0.2	<0.2
Cadmium (Cd)	<0.001	<0.001	<0.001
Chromium (Cr)	<0.001	<0.001	<0.001
Copper (Cu)	0.15	0.32	.005
Iron (Fe)	0.02	0.02	0.10
Lead (Pb)	<0.01	<0.01	<0.01
Manganese (Mn)	0.002	<0.002	0.012
Selenium (Se)	<0.001	<0.001	<0.001
Silver (Ag)	<0.01	<0.01	<0.01
Zinc (Zn)	<0.05	0.15	<0.05
Silica (SiO_2)	5.3	7.3	14.5
Ammonia (Albuminoid-NH_3)	0.10	0.15	0.18
Ammonia (Free-NH_3)	0.02	0.02	0.02
Boron (B)	<0.01	<0.01	<0.01
Cyanide (CN^-)	<0.003	<0.003	<0.003
Nitrate (NO_3^-)	0.2	<0.1	<0.1
Nitrite (NO_2^-)	<0.004	<0.004	0.004
Phosphate ($PO_4^{\equiv}$)	<0.01	0.01	<0.01
Tannins & Lignins	0.02	0.04	0.08
Phenol	<0.001	<0.001	<0.001
Dissolved Oxygen (O_2)	9.4	9.6	8.3
Detergent	0.000	<0.01	<0.02
Chemical Oxygen Demand	<0.1	0.7	0.2
Derived Values:			
Hardness as $CaCO_3$	40.9	52.8	115
Alkalinity as $CACO_3$	30.8	41.0	106
Total Solids:			
Residue at 200° C	65.5	88.2	170
Organic Matter (Loss at 600° C)	18.9	23.5	44
PHYSICAL MEASUREMENTS			
Conductivity (Micromhos/CM)	128	176	310
pH	7.4	7.4	7.9
Turbidity (units)	0.5	1	1
Color (units)	4	5	13
Radioactivity (Micromicrocuries/liter	± 90%		
Alpha	0.7 ± 0.5	0.5 ± 0.8	0.7 ± 2.9
Beta	9 ± 5	2.1 ± 3.4	*N.S.

NOTE: All values are below the recommended limits given in the "Public Health Service Drinking Water Standards 1962."

*N.S. Not Significant

SAN FRANCISCO WATER DEPARTMENT
MINERAL ANALYSES
Table III

	G	H	I
Source	San Antonio Reservoir	Pleasanton Well Field	Lake Merced Reservoir
Date Sampled	June 23, 1967	June 23, 1967	June 23, 1967
MAJOR CHEMICAL CONSTITUENTS	MG/liter	mg/liter	mg/liter
Cations:			
Calcium (Ca^{++})	40.7	19.2	28.7
Magnesium (Mg^{++})	5.4	58.3	30.3
Sodium (Na^+)	10.1	28.9	51.6
Potassium (K^+)	1.9	1.1	2.1
Anions:			
Bicarbonate (HCO_3^-)	139	300	201
Carbonate (CO_3^{--})	0.0	0.0	0.0
Chloride (Cl^-)	10	37	95
Sulfate (SO_4^{--})	22	46	17
Fluoride (F^-)	0.1	0.1	0.1
MINOR, TRACE, AND NONIONIC CONSTITUENTS			
Aluminum (Al)	0.10	0.02	0.04
Arsenic (As)	<0.01	<0.01	<0.01
Barium (Ba)	0.01	0.01	0.01
Cadmium (Cd)	<0.01	<0.01	<0.01
Chromium (Cr)	<0.001	<0.001	<0.001
Copper (Cu)	0.02	<0.01	<0.01
Iron (Fe)	0.02	0.01	<0.01
Lead (Pb)	0.002	0.002	0.005
Manganese (Mn)	0.002	0.001	0.001
Selenium (Se)	<0.01	<0.01	0.01
Silver (Ag)	<0.01	<0.01	<0.01
Zinc (Zn)	<0.05	<0.05	<0.05
Silica (SiO_2)	6.5	13.3	20.2
Ammonia (Albuminoid-NH_3)	0.25	0.07	0.30
Ammonia (Free-NH_3)	0.02	0.00	0.05
Boron (B)	0.10	0.14	0.08
Cyanide (CN^-)	<0.01	<0.01	<0.01
Nitrate (NO_3)	0.33	11.8	<0.05
Nitrite (NO_2^-)	0.04	<0.002	<0.002
Phosphate ($PO_4^{\equiv}$)	<0.01	<0.01	<0.01
Tannins & Lignins	0.04	0.03	0.04
Dissolved Oxygen (O_2)	8.2	4.1	6.5
Detergent	<0.001	<0.001	<0.001
Chemical Oxygen Demand	0.3	0.3	0.3
DERIVED VALUES			
Hardness as $CaCO_3$	126	288	196
Alkalinity as $CaCO_3$	114	246	165
Total Solids:			
Residue at 200° C	135.1	367	340.3
PHYSICAL MEASUREMENTS			
Conductivity (Micromhos/CM)	320	700	560
pH	8.1	7.8	8.2
Turbidity (units)	5	0	2
Color (units)	10	0	5
Radioactivity (Micromicrocuries/liter ± 90%			
Alpha	* N.S.	*N.S.	*N.S.
Beta	* N.S.	12 ± 23	*N.S.

NOTE: All values are below the recommended limits given in the "Public Health Service Drinking Water Standards 1962."

*N.S. Not Significant

DISTRIBUTION AND CONSUMPTION

Within the City of San Francisco the Department distributes, delivers and meters water directly to consumers. Outside of San Francisco water is delivered and metered from transmission mains to water purveyors who distribute to customers in their service areas.

✓

METERED DELIVERIES
1966 - 1967

	Million Cubic Feet Year	M.G.D.	%	% Increase Over Prior Year
City*	4,352.5	89.2	43.8	1.8
Suburban**	5,589.8	114.5	56.2	5.7
Systemwide	9,942.3	203.7	100.0	4.0

*Includes 309.5 million cubic feet (2,315.1 million gallons) used by municipal non-pay accounts.

**Includes 89.7 million cubic feet (671.0 million gallons) used by suburban non-pay accounts.

The following tables give detailed information on sales, delivery and consumption for fiscal 1966-1967.

WATER SOLD IN SUBURBAN AREA

FISCAL YEAR 1966 - 1967

SAN MATEO COUNTY	Cubic Feet Total For Year	MGD	CHARGE Total For Year
MUNICIPAL UTILITIES			
City of Redwood City	328,054,100	6.72	$ 509,445.14
City of Burlingame	213,240,400	4.37	341,725.64
Belmont County Water Dist.	142,425,400	2.92	222,116.12
North Coast County Water Dist.	134,871,400	2.76	210,851.48
Menlo Park Muni. Water Dist.	129,641,600	2.66	210,682.20
City of Millbrae	127,370,700	2.61	207,577.95
Town of Hillsborough	119,170,900	2.44	199,357.26
City of San Bruno	109,690,300	2.25	178,052.44
East Palo Alto Water Dept.	90,238,500	1.85	142,722.28
City of Daly City	62,895,200	1.29	106,993.48
Estoro Municipal Impro. Dist.	27,473,700	0.56	45,682.76
Dimond Public Utility District	14,475,000	0.30	26,514.94
Westborough County Water Dist.	14,659,400	0.30	25,614.85
City of Brisbane	12,368,400	0.25	24,244.39
Coastside County Water Dist.	12,305,700	0.25	22,642.94
Guadalupe Valley Impro. Dist.	4,549,900	0.09	11,397.59
Palomar Park Muni. Impr. Dist.	2,624,600	0.05	5,897.33
Skyline County Water Dist.	1,054,500	0.02	3,013,54
Los Trancos	761,300	0.01	1,951.12
Cordilleras Mutual Water Asso.	336,400	0.01	1,000.16
Airport	57,570,800	1.19	104,356.89
TOTAL MUNICIPAL UTILITIES	1,605,778,200	32.90	$2,601,840.50
Other Water Sold	1,469,915,500	30.12	2,380,524.43
TOTAL SAN MATEO COUNTY	3,075,693,700	63.02	$4,982,364.93

(continued)

WATER SOLD IN SUBURBAN AREA

FISCAL YEAR 1966 - 1967

(continued)

SANTA CLARA COUNTY	CUBIC FEET Total for Year *	M.G.D.	CHARGE Total for Year
MUNICIPAL UTILITIES			
City of Palo Alto	652,775,400	13.38	$1,005,305.07
City of Sunnyvale	404,893,000	8.30	629,038.77
City of Mountain View	233,815,700	4.79	364,024.47
City of Milpitas	159,678,000	3.27	247,185.76
Purissima Hills Co. Water Dist.	31,058,200	0.64	51,795.14
TOTAL MUNICIPAL UTILITIES	1,482,220,300	30.38	$2,297,349.21
Moffett Field	71,139,300	1.46	108,561.25
Other Water Sold	13,570,000	0.27	27,539.29
TOTAL SANTA CLARA COUNTY	1,566,929,600	32.11	$2,433,449.75
ALAMEDA COUNTY			
MUNICIPAL UTILITIES			
Hayward Municipal Water System	545,694,800	11.18	$ 827,771.93
Alameda County Water Dist.	247,091,000	5.07	396,570.90
TOTAL MUNICIPAL UTILITIES	792,785,800	16.25	$1,224,342.83
Other Water Sold	64,673,200	1.33	117,250.02
TOTAL ALAMEDA COUNTY	857,459,000	17.58	$1,341,592.85
TOTAL WATER SOLD SUBURBAN AREA	5,500,082,300	112.71	$8,757,407.53

* These quantities are measured by the consumers' meters and for this fiscal year an average of about 3.5% must be added in order to determine the quantities of water required to be produced and released for consumption in each case. This is true for all quantitites of water shown in this "Distribution and Consumption" section of the Annual Report.

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1966-67

Area, Utility or District	Delivery Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
San Mateo County				
Bayshore City (Dimond Utility District)	14,475,000 ✓	0.30	0.30	336
Brisbane	12,368,400 ✓	0.25	0.25	287
Guadalupe Valley Muni. Impr. District	4,549,900 ✓	0.09	0.09	105
Daly City	62,895,200 ✓	1.29	1.31	1,462
Colma (Broadmoore, Calif. Water Serv. Co.)	28,562,400 ✓	0.59	0.60	663
South San Francisco (Control 802) (Calif. Water Serv. Co.)	296,844,600 ✓	6.08	6.16	6,898
North Coast Co. Water Dist.	134,871,400 ✓	2.76	2.80	3,134
Coastside Co. Water Dist.	12,305,700 ✓	0.25	0.25	285
San Bruno	109,690,300 ✓	2.25	2.28	2,549
S. F. International Airport Sold 57,570,800 Cu.Ft. ✓ S.F.Use 29,909,700 " "(2) ✓	87,480,500 ✓	1.79	1.81	2,033
Millbrae	127,370,700 ✓	2.61	2.64	2,960
Burlingame	213,240,400 ✓	4.37	4.42	4,955
Hillsborough	119,170,900 ✓	2.44	2.47	2,770
Crystal Springs Golf Club(2)	6,592,300	0.14	0.14	153
San Mateo (Calif. Water Serv. Co.)	537,950,000 ✓	11.03	11.17	12,502
Belmont County Water Dist.	142,425,400 ✓	2.92	2.96	3,310
San Carlos (Control 806) (Calif. Water Serv. Co.)	167,103,700 ✓	3.43	3.47	3,884

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1966-67

(continued)

Area, Utility or District	Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
San Mateo County (Cont'd)				
Westborough Co. Water Dist.	14,659,400 ✓	0.30	0.30	341
Redwood City	328,054,100 ✓	6.72	6.80	7,635
Redwood City (Calif. Water Serv. Co.)	23,658,800 ✓	0.49	0.50	549
Cordilleras Mut'l Water	336,400 ✓	0.01	0.01	7
Palomar Pk. Co. Water Dist.	2,624,600 ✓	0.05	0.05	60
Woodside (Calif. Water Serv. Co.)	71,941,300 ✓	1.48	1.50	1,672
~~To~~ Bear Gulch District (Calif. Water Serv. Co.)	120,152,300 ✓	2.46	2.49	2,792
Menlo Park Muni. Water Dist.	129,641,600 ✓	2.66	2.69	3,012
Menlo Park (Calif. Water Serv. Co.)	156,497,600 ✓	3.21	3.25	3,637
Friendly Acres (Clyde Henry)	25,324,100 ✓	0.52	0.53	588
* East Palo Alto Water Dept.	90,238,500 ✓	1.85	1.87	2,097
Skyline County Water Dist.	1,054,500 ✓	0.02	0.02	24
Estero Municipal Improvement District	27,473,700 ✓	0.56	0.57	638
Los Trancos	761,300 ✓	0.01	0.01	17
City of San Francisco				
County Jail (2)	29,438,500 ✓	0.60	0.61	684
Social Services (2)	671,600 ✓	0.01	0.01	15
Hassler Hospital (2)	2,886,900 ✓	0.06	0.06	67
Other Water delivered in San Mateo Co.	41,875,700 ✓	0.86	0.87	973
Total for San Mateo Co.	3,145,192,700 ✓	64.46	65.26	73,094

*Formerly Ravenswood Water Dist.

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1966-67

(continued)

Area, Utility or District	Metered Delivery		Consumption(1)	
	Cu.Ft. Year	MGD	MGD	Ac.Ft. Year
Santa Clara County				
Palo Alto	652,775,400 ✓	13.38	13.55	15,171
Purissima Hills Co. Water Dist.	31,058,200 ✓	0.64	0.65	722
Mountain View	233,815,700 ✓	4.79	4.85	5,434
Moffett Field	71,139,300 ✓	1.46	1.48	1,653
Sunnyvale	404,893,000 ✓	8.30	8.40	9,410
Agnew State Hospital	4,481,500 ✓	0.09	0.09	104
Milpitas Co. Water Dist.	159,678,000 ✓	3.27	3.31	3,711
Other Water delivered in Santa Clara County	9,088,500 ✓	0.18	0.18	211
Total for Santa Clara Co.	1,566,929,660 ✓	32.11	32.51	36,416
Alameda County				
Alameda County Water Dist.	247,091,000 ✓	5.06	5.12	5,743
Newark (various consumers)	19,146,900 —	0.39	0.40	445
Hayward Muni. Water System	545,694,800 ✓	11.18	11.32	12,682
Atomic Energy Commission Livermore (2)	23,283,422 ×	0.48	0.49	541
Sunol				
Domestic Supply	2,718,900 —	0.06	0.06	63
Water Dept. Lands (2) From Transmission Lines	92,944,900 ×	1.90	1.92	2,160
Water Dept. Lands (2) Est'd Not From Transmission Lines	4,831,700 ×	0.10	0.10	112
Vallecitos	34,825,300 —	0.71	0.72	809
Castlewood Country Club	4,695,200 —	0.10	0.10	109

* 20,170,600 of Alameda Co. Sales are MUNI NON-PAY.

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1966-67

(continued)

Area, Utility or District	Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
Alameda County Cont'd)				
Discontinued June 30, 1960				
Pleasanton Well Field Agricultural Use (2) Estimated	51,486,500	1.06	1.07	1,197
Other Water delivered in Alameda County	23,457,500	0.48	0.48	545
Total for Alameda County	1,050,176,122	21.52	21.78	24,406
Total for San Mateo, Santa Clara and Alameda Counties	5,762,298,422	118.09	119.55	133,916
San Francisco County				
San Francisco	4,352,548,700	89.20	94.95	106,365
From Lake Merced and Golden Gate Park Wells (2) Estimated	41,042,800	0.84	0.90	1,003
Total for San Francisco County	4,393,591,500	90.04	95,84	107,368
Total for San Francisco Water Department System	10,155,889,922	208.13	215.39	241,284

(1) Consumption is system input. The difference between "consumption" and "metered delivery" consists of system losses and uses, including leakage, losses due to pipe breaks, under-registration of meters, water used at hydrants that is not billed (fire use in San Francisco averaged 0.01 MGD), blowoff water, water used for Water Department operating purposes, evaporation from distribution reservoirs and other similar losses.

(2) This water is not included in the tabulation of water sold.

REVENUE

The Water Department is entirely self-supporting. All operating costs, taxes, capital costs, bond interest and bond redemption (including the original $40,000,000 bond issue for purchase of Spring Valley Water Company) are paid from revenues. In addition, the Department furnishes free water to other San Francisco city departments that are tax supported.

Water Sales were 4.5% greater than for the previous year. Net sales in San Francisco produced 56.1% of the water sales revenue, with the balance of 43.9% coming from deliveries outside of the city.

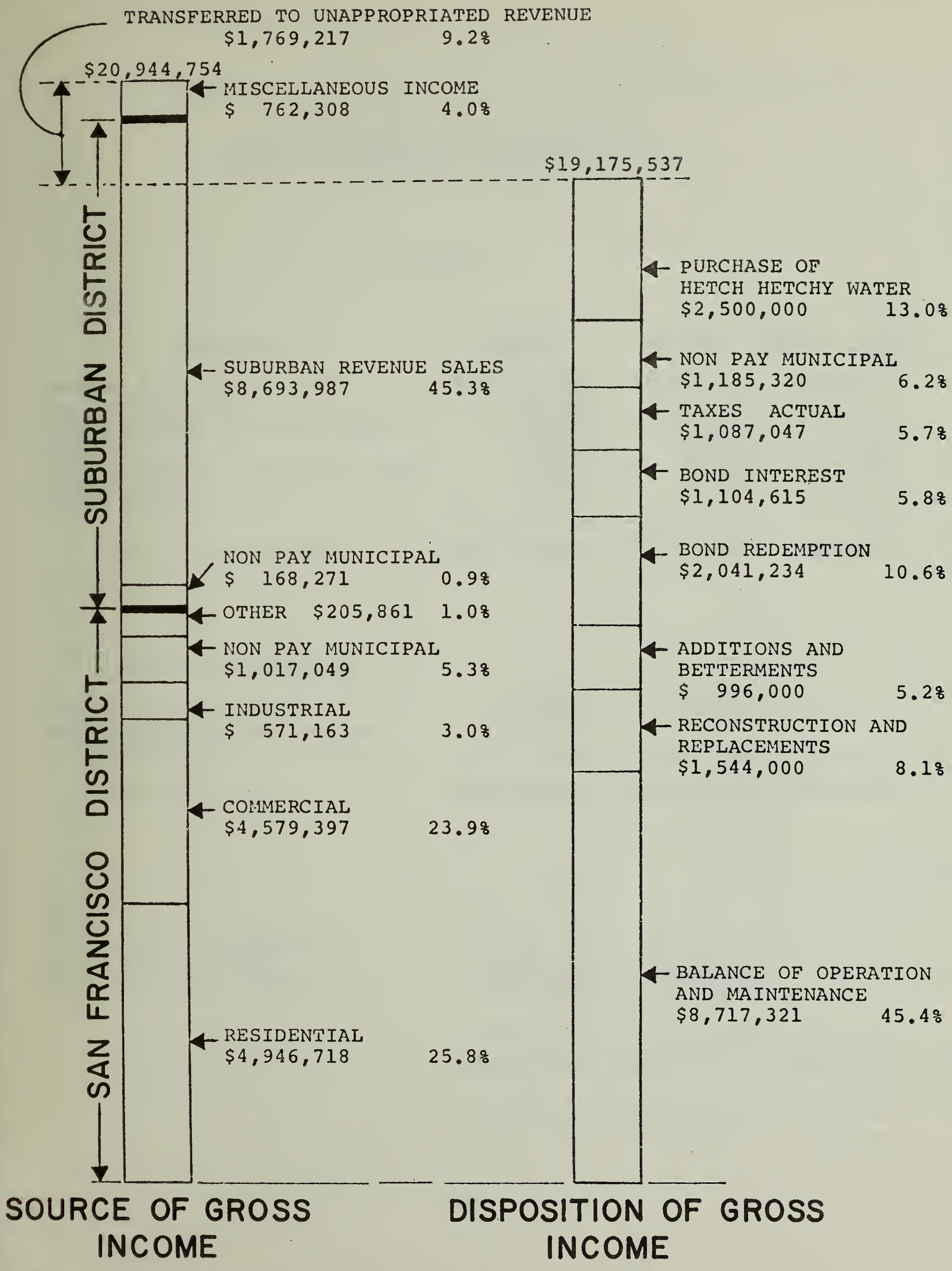
It may be noted that these revenue percentages are approximately reversed from the metered quantities delivered shown in the preceding section.

	Metered Quantities	Revenue
San Francisco	43.8%	56.1%
Suburban	56.2%	43.9%

This occurs because the larger quantities of water delivered to a single account for resale fall in a lower unit price bracket than the numerous small consumer accounts within the city.

Other Income includes such items as: rentals, crop shares and royalties amounting to $457,625; walnut orchard crop $22,000; and interest on bank balances of $152,902.

The following tables give detail of revenue sources and expenditures.



FISCAL YEAR ENDING 6-30-67

SAN FRANCISCO WATER DEPARTMENT
SUMMARY OF RECEIPTS AND EXPENDITURES
FISCAL YEAR 1966-67

RECEIPTS

REVENUES	BUDGET	ACTUAL	-UNDER, OVER
Revenue from Sale of Water	$18,320,000	$18,997,500	$677,500
New Installations	190,000	108,527	-81,473
Rents, including Commissions	450,000	455,443	5,443
Interest	100,000	152,903	52,903
Sale of Walnuts and Other Crops	30,000	17,407	-12,593
Miscellaneious	30,000	28,028	- 1,972
TOTAL GROSS REVENUE	$19,120,000	$19,759,808	$639,808
RECEIPTS BY TRANSFER			
1961 Water Bond Fund	725,842	725,842	---
From Unappropriated Revenue Prior Years	1,700,000	1,700,00	---
TOTAL RECEIPTS	$21,545,842	$22,185,650	$639,808
LESS			
Allocation of Revenue to Hetch Hetchy Project	-2,500,000	-2,500,000	---
Unappropriated Revenue	-2,283,948	-2,283,948	---
TOTAL BUDGET	$16,761,894	$17,401,702	$639,808

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT
COMPARISON OF BUDGETED AND ACTUAL EXPENDITURES (INCLUDING ENCUMBRANCES)
FISCAL YEAR 1966-67

DESCRIPTION	BUDGET	ACTUAL	-UNDER, OVER
Permanent Salaries	$ 2,964,586	$ 2,642,931	$ -321,655
Allowance for Overtime	30,542	30,496	-46
Allowance for Holidays	15,423	15,017	-406
Extended Work Week	52,241	51,235	-1,006
Temporary Salaries	85,736	81,605	-4,131
Wages	3,158,781	3,122,394	-36,387
Wages - Gardeners	146,688	134,446	-12,242
	$ 6,453,997	$ 6,078,124	$ -375,873
Contractual Services	461,260	509,391	48,131
Maint. & Repair Auto. Equip.	128,230	138,932	10,702
Heat, Light & Power	349,110	346,980	-2,130
Subsistence & Care of Persons	1,200	790	-410
Bond Sale Expense	10,000	5,266	-4,734
Materials & Supplies	753,000	732,896	-20,104
Compensation Insurance	22,571	27,969	5,398
Injuries & Damages	20,000	23,615	3,615
Fidelity Insurance	1,175	1,272	97
Automobile Insurance	16,960	11,813	-5,147
Fire Insurance	2,310	2,310	- 0 -
Other Insurance	12,000	9,457	-2,543
Commissions for Collections	19,800	17,983	-1,817
Assessments & Contributions	25,000	4,562	-20,438
Membership Dues	570	510	-60
Fees, Licenses & Permits	8,900	7,498	-1,402
Retirement Allowance	324,669	308,371	-16,298
Social Security	158,849	162,077	3,228
Health Service System	39,092	42,839	3,747
Taxes	1,075,000	1,087,047	12,047
Rents	4,510	1,442	-3,068
Services of Other Departments	179,669	174,815	-4,854
Electronic Data Processing	300,000	220,163	-79,837
TOTAL OPERATING BUDGET	$ 10,367,872	$ 9,916,122	$ -451,750
Equipment	132,927	128,342	-4,585
Additions & Betterments	996,000	996,000	- 0 -
Reconstruction & Replacement	1,544,000	1,544,000	- 0 -
Bond Interest & Redemption	3,721,095	3,145,849	-575,246
TOTAL BUDGET	$ 16,761,894	$15,730,313	$-1,031,581

ADDITIONS, BETTERMENTS, RECONSTRUCTION AND REPLACEMENTS

During the fiscal year this Department handled 59 formal construction contracts valued at $20,750,012.04. Forty-six of the 59 were new contracts awarded during the year, of which 23 were completed, 8 were under construction, and 15 were not started. Thirteen contracts were carried over from the previous year and were completed during the fiscal year.

The money actually spent on contracts during the fiscal year ending June 30, 1967, including the engineering and inspections costs bid by the contractor on the cast iron main contracts, was approximately $9,762,493.67.

Major emphasis during the year focused on completion of nearly all projects in the Alameda Division under the 1961 Municipal Water Bond fund; completion of Section A, Bay Division Pipeline No. 4 (8.5 miles of 96-inch diameter pipe, the largest in our transmission lines); and the start of construction of the 17,200 feet of 9.5-foot diameter Crystal Springs Bypass Tunnel which upon completion will be able to deliver Hetch Hetchy water directly to San Francisco without emptying first into Peninsula reservoir.

Bond fund projects in Alameda Division included completion of 90-inch Alameda Creek Siphon No. 3, completion of $177,000 connections to Alameda Creek Siphon No. 3, completion of $1,033,000 60-inch San Antonio and 36-inch Sunol Pump Pipelines, and 83 per cent completion of $1,262,000 San Antonio and Sunol Pumping Stations. Upon completion of the pumping stations all work in Alameda Division included under bond fund projects will be completed.

Considerable staff time was spent in discussions with representatives of the Division of Highways, BARTD, City and County agencies, other organizations and interested individuals on relocation of utilities because of streets, freeways, flood control channels and other utility crossings and interference with Department facilities and in preparation of permits or contracts leading to the solution of these relocation problems. Of major importance to the Department was the negotiation and work involved in utility relocation for the Embarcadero Freeway, the Junipero Serra Freeway, the Sunol-Dublin Freeway, and the Mission San Jose to San Jose Freeway. The Junipero Serra Freeway involved arriving at satisfactory arrangements with the State to protect the lakes from high turbidity during the freeway construction.

During this year several Professional Services Agreements were arranged and work under existing agreements was continued. This type of agreement is used for the performance of work that requires specialized experience and personnel or for work that the Department cannot accomplish on schedule because qualified personnel are already engaged on projects of high priority.

Professional services contracts and agreements for the fiscal year are as follows:

1. Professional Services for a Proposed Pleasanton Industrial Park - Development Planning Associates, Inc.
2. Professional Services for a Peninsula Land Use Study - Metcalf & Eddy and Wilsey & Ham - A Joint Venture.
3. Waste Water Survey - The Pitometer Associates.
4. Professional Services, Plans, Specifications, Estimates and Consulting Services during Construction of the San Antonio - Calaveras Water Filtration Plant - Joint Venture of Brown and Caldwell and James M. Montgomery, Consulting Engineers.
5. Professional Water Supply Studies - Daniel, Mann, Johnson and Mendenhall.
6. Professional Services Relating to the San Andreas Water Filtration Plant and the Crystal Springs Water Filtration Plant - Joint Venture of Brown and Caldwell and James M. Montgomery, Consulting Engineers.
7. Professional Services in Connection with Boring and Soil Tests for Alameda Creek Siphon Connections - Woodward-Clyde-Sherard and Associates, Consulting Soil and Foundation Engineers.
8. Professional Services for Crystal Springs Bypass Tunnel - Bechtel Corp.

Existing cathodic protection stations along the transmission mains were inspected regularly and adjusted to insure adequate protection to the pipelines in the most corrosive areas. New construction on all pipelines is including electrical continuity, plus electrolysis test leads at reasonable locations.

On July 5, 1966, a contract was awarded to The Pitometer Associates for additional leak surveys. The approved cost of work under this contract to June 30, 1967 was $17,235.

Under the new contract for the period July 1, 1966 to June 30, 1967, leak surveys were conducted on 201 miles of water mains in 14 districts. Eighty-eight leaks were located and repaired, reducing waste a total of 685,000 gallons per day. At the minimum rate for water sold within the city limits, the repair of these leaks represented an annual saving of approximately $40,750.

The six major projects authorized by the $115,000,000 Water Supply Improvement Bond Issue at the 1961 election were proceeding on a revised schedule. Construction of the 60-inch San Antonio Pipeline and 36-inch Sunol Pump Pipeline, Alameda Creek Siphon No. 3, and Bay Division Pipeline No. 4, Section A, was completed during the year.

The remaining projects or units of projects and their tentative beginning construction dates are as follows:

1.	1968	Bay Division Piepline No. 4 Section C	$ 4,400,000
2.	1966	San Antonio Dam Project San Antonio and Sunol Pumping Station (83.3% complete on June 30, 1967)	1,258,500
3.	1966	Bay Division Lines to Crystal Springs Lines Connection (46% complete on June 30, 1967)	8,616,850
4.	1967	Crystal Springs to San Andreas Reservoir Pipeline	1,830,036
	1968	Crystal Springs Pump Station Improvements	870,000
5.	1968	Crystal Springs Pipeline No. 3 Burlingame to Baden Section	3,300,000
6.	1969	Balboa Reservoir, Lining, Roof and Appurtenances - South Basin	3,000,000

FORMAL CONTRACTS

The work under formal contracts has been separated into two main categories: Replacements and Additions to City pipe system, and Replacements and Additions to supply, transmission, treatment and miscellaneous facilities. Forty contracts valued at $2,349,862 were for additions, replacements and relocations to the City pipe system and nineteen contracts valued at $18,400,150 were for replacements and additions to supply, transmission, treatment and miscellaneous facilities. The contracts on the City pipe system include relocations required because of freeway construction, which work is performed at State expense except for certain credit allowances for depreciation of the replaced facility.

REPLACEMENTS AND ADDITIONS TO CITY PIPE SYSTEM

The 40 contracts for additions to the City pipe system provided for the installation of about 51,780 feet of pipe. Most of this pipe was cast iron and ductile iron varying from 4-inch to 16-inch diameter, approximately 63 per cent of which was 6-inch and 8-inch diameter. Included in this amount was 12,060 feet of 24-inch, 30-inch and 48-inch steel pipe. However, not all of this pipe was installed during the fiscal year.

Contract No. 1122--For the laying of 1,367 feet of 8-inch and 2,060 feet of 16-inch cast iron and 106 feet of 18-inch steel main in Iowa, Mariposa and other streets. The contract was awarded to Associated Pipeline, Inc. on September 7, 1965 at a bid price of $67,445.00 and completed on 8-8-66 at a cost of $77,043.13.

Contract No. 1211--For the laying of 11,323 feet of 6-inch cast iron and 2,399 feet of 8-inch cast iron mains in St. Francis Woods. The contract was awarded to Associated Pipeline, Inc. on March 1, 1966 at a bid price of $170,886.50 and was completed on 8-23-66 at a cost of $175,075.30.

Contract No. 1232--For the laying of 8-inch ductile iron main in Quint Street between Newcomb and Jerrold Avenues. The contract was awarded to W. L. Fairey on January 23, 1967 at a bid price of $10,898.60. The work on this job is not yet completed.

Contract No. 1239--For the excavation and repaving of approximately 330 water service renewals. The contract was awarded to Baldwin and Warren Co., Inc. on June 8, 1966 at a bid price of $49,771.00 and was completed September 20, 1966 at a cost of $41,098.70

Contract No. 1241--For excavation and repaving of approximately 300 water service renewals. The contract was awarded to the Lowrie Paving Co., Inc. on May 10, 1966 at a bid price of $53,874.00, and was completed on September 29, 1966 at a cost of $57,078.54

Contract No. 1246--For the laying of 4-inch cast iron and 8-inch ductile iron pipelines in Carson, Head, St. Charles and other streets. The contract was awarded to Associated Pipe Line Inc. on May 24, 1966 at a bid price of $59,045.75 and completed on August 2, 1966 at a cost of $56,076.85.

Contract No. 1248--For the laying of 8-inch and 12-inch cast iron mains in Arguello Blvd., Carl Street and Hillway Avenue. The contract was awarded to W. L. Fairey on June 8, 1966 at a bid price of $29, 965.00 and completed on August 12, 1966 at a cost of $27,796.15.

Contract No. 1251--For the laying of 4-inch and 6-inch cast iron mains in Funston Avenue South of Quintara Street. The contract was awarded to Associated Pipe Line Inc. on January 10, 1967 at a bid price of $11,723.00 and completed on March 17, 1967 at a cost of $11,711.70

Contract No. 1253--For the laying of 720 feet of 8-inch cast iron and 700 feet of 12-inch cast iron mains in Burnett Avenue North of Dixie Alley. The contract was awarded to W. L. Fairey on 2-21-67 at a bid price of $18,188.00. Work has not been started as of June 30, 1967.

Contract No. 1256--For the laying of 8-inch and 12-inch cast iron mains in Burnett Avenue east of Twin Peaks Boulevard. The Contract was awarded to McGuire and Hester on March 28, 1967 at a bid price of $18,887.00. Work has not been started as of June 30, 1967.

Contract No. 1257--For the repaving of streets or sidewalk openings for the San Francisco Water Department for the Fiscal Year ending June 03, 1967. The contract was awarded to Baldwin and Warren Co., Inc. on June 8, 1966 at a bid price of $335,450.00. A total of #317,889.58 was paid under this contract for the fiscal year.

Contract No. 1258--For the laying of 6-inch ductile iron mains in Madison and Pioche Streets. The contract was awarded to M. F. Weber on June 27, 1967 at a bid price of $6,760.50. Work has not started as of June 30, 1967.

Contract No. 1261--For the laying of 6-inch cast iron mains in 14th Avenue between Rivera and Quintara Streets. The contract was awarded to Associated Pipe Line Inc. on January 17, 1967 at a bid price of $8,692.50 and completed on February 21, 1967 at a cost of $8,298.45.

Contract No. 1262--For the laying of 90 feet of 8-inch and 440 feet of 12-inch cast iron mains in Duboce Avenue between Noe and Castro Streets. The contract was awarded to Lowrie Paving Co., Inc. on 8-2-66 at a bid price of $13,399.30 and completed on 9-30-66 at a cost of $12,573.29.

Contract No. 1266--For the excavation and repaving for water service renewals in the Downtown and North Beach areas. The contract was awarded to Lowrie Paving Co., Inc. on August 23, 1966 at a bid price of $29,539.00 and completed on November 11, 1966 at a cost of $32,343.50.

Contract No. 1267--For the excavation and repaving for water service renewals. The contract was awarded to Associated Pipe Line Inc. on September 6, 1966 at a bid price of $30,960.00 and completed on December 8, 1966 at a cost of $31,456.20.

Contract No. 1268--For the excavation and repaving for water service renewals. The contract was awarded to Lowrie Paving Co. on October 25, 1966 at a bid price of $77,560.00 and completed on February 10, 1967 at a cost of $81,653.40.

Contract No. 1269--For the laying of 6-inch cast iron main in Mississippi Street north of 25th Street. The contract was awarded to McGuire and Hester on September 27, 1966 at a bid price of $5,969.75 and completed on December 23, 1966 at a cost of $5,986.05.

Contract No. 1272--For the laying of 16-inch ductile and 24-inch and 30-inch steel mains in Junipero Serra, Garfield, Randolph and other streets. The contract was awarded to McGuire and Hester on December 20, 1966 at a bid price of $408,583.00. As of June 30, 1967 the work is 98.7 percent complete at a cost of $309,657.06.

Contract No. 1273--For the laying of 8-inch cast iron main in Iowa Street south of 22nd Street. The contract was awarded to Associated Pipe Line Inc. on November 15, 1966 at a bid price of $5,857.25 and completed on December 21, 1966 at a cost of $5,886.60.

Contract No. 1274--For the laying of 6" cast iron main in Stanyan Street between Fulton and Grove Streets. The contract was awarded to Lowrie Paving Co. Inc. on October 11, 1966 at a bid price of $8,613.00 and completed on November 21, 1966 at a cost of $8,355.90.

Contract No. 1275--For the laying of 8-inch cast iron main in 5th Avenue North of Lake Street. The contract was awarded to W. L. Fairey on October 11, 1966 at a bid price of $9,218.00 and completed on December 13, 1966 at a cost of $9,179.50.

Contract No. 1277--For the laying of 4-inch and 6" cast iron mains in Fern, Franklin and other streets. The contract was awarded to Underground Construction Co., Inc. On January 10, 1967 at a bid price of $35,726.00 and completed April 25, 1967 at a cost of $37,803.60.

Contract No. 1279--For the excavation and repaving for water service renewals. The contract was awarded to The Lowrie Paving Co., Inc. on November 15, 1966 at a bid price of $41,750.00 and completed on February 15, 1967 at a cost of $45,507.75.

Contract No. 1281--For the laying of 25 feet of 8-inch and 350 feet of 12" cast iron pipe in Army Street between Louisiana and Maryland Streets. The contract was awarded at W. L. Fairey on 4-18-67 at a bid price of $8,035.00 and completed on 6-20-67 at a cost of $7,173.70.

Contract No. 1282--For the excavation and repaving for water service renewals. The contract was awarded to the Lowrie Paving Co., Inc. on February 7, 1967 at a bid price of $42,100.00 and completed on April 12, 1967 at a cost of $45,713.00.

Contract No. 1283--For the excavation and repaving for water service renewals. The contract was awarded to Associated Pipe Line Inc. on March 14, 1967 at a bid price of $46,115.00 on June 9, 1967 at a cost of $46,328.70.

Contract No. 1284--For the excavation and repaving for water service renewals. The contract was awarded to Associated Pipe Line Inc. on March 28, 1967 at a bid price of $27,390.00. Work was started May 1, 1967 and was completed on June 16, 1967 at a cost of $20,232.10.

Contract No. 1285--For the laying of 6-inch and 8-inch ductile iron mains in Ocean Avenue, DeHaro Street and other streets. The contract was awarded to W. L. Fairey on June 13, 1967 at a bid price of $42,862.00. Work as of June 30, 1967 has not yet started.

Contract No. 1288--For the laying of 6-inch cast iron mains in Wayland, Utah, Sawyer and other streets. The contract was awarded to M. F. Weber Pipeline Construction on April 11, 1967 at a bid price of $36,910.00. Work was started May 15, 1967 and was approximately 90 percent completed at a cost of $16,053.30 as of June 30, 1967.

Contract No. 1289--For the relocation of 24-inch steel main in San Jose Avenue between 26th and Army Streets. The contract was awarded to McGuire and Hester on April 11, 1967 at a bid price of $11,725.00. Work has been started but due to many delays no work has yet been done by the San Francisco Water Department as of June 30, 1967.

Contract No. 1291--For the laying of 6-inch and 8-inch ductile iron mains in Polk, Beach and Fillmore Streets. The contract was awarded to W. L. Fairey on May 23, 1967 at a bid price of $44,095.00. Work has not started as of June 30, 1967.

Contract No. 1293--For the laying of 48-inch steel main in James Rolph Playground at Army Street between Hampshire Street and Potrero Avenue. The contract was awarded to Underground Construction Co., Inc. on January 24, 1967 at a bid price of $33,569.00 and completed March 24, 1967 at a cost of $34,354.60.

The work performed under this contract is part of the work necessary to relocate the existing main around the preposed rechannelization of Army Street Circle. The remainder of the work necessary will be performed at an estimated cost of $157,000.00.

Contract No. 1296--For excavation and repaving for water service renewals. The contract was awarded to The Lowrie Paving Co. on May 16, 1967 at a bid price of $77,802.50. The work was 17 percent complete on June 30, 1967 at a cost of $11,451.46.

Contract No. 1301--For the laying of 4-inch, 6-inch and 8-inch ductile iron mains in Green and Varennes Streets. The contract was awarded to McGuire and Hester on June 6, 1967 at a bid price of $33,866.50. Work has not started as of June 30, 1967.

Contract No. 1302--For the laying of 4-inch and 6-inch ductile iron mains in Mason and Hayes Streets. The contract was awarded to W. L. Fairey on May 9, 1967 at a bid price of $15,920.60. Work is 35 percent complete as of June 30, 1967.

Contract No. 1303--For the laying of 4-inch and 6-inch ductile iron mains in Maiden Lane between Stockton and Kearny Streets. The contract was awarded to San Francisco Water Department on June 27, 1967. Work has not started as of June 30, 1967.

Contract No. 1304--For the laying of 6-inch ductile iron mains in Harrison and 19th Streets. The contract was awarded to R. B. McNair Sons on June 27, 1967 at a bid price of $12,641.00. Work has not started as of June 30, 1967.

Contract No. 1306--For the excavation and repaving for installation of Blow-Offs. The contract was awarded to The Lowrie Paving Co., Inc. on May 23, 1967 at a bid price of $23,291.00. Work has started.

Contract No. 1314--For the repaving of street and sidewalk openings for the San Francisco Water Department for the Fiscal Year 1967-1968. The contract was awarded to Pacific Pavements Co., Ltd. on June 13, 1967 at a bid price of $367,000.00. Work has not started as of June 30, 1967.

Replacements and Additions to Supply, Transmission, Treatment and Miscellaneous Facilities: (Includes Bond Projects)

A total of approximately $8,541,375.74 was spent during the fiscal year for work in this category.

The largest amount paid under a single contract in progress during the year was $3,584,812.11 for construction of Crystal Springs Bypass Tunnel and Appurtenant Works, San Mateo County, WD-1190.

The largest contract award was $8,616,850 for the same contract, WD-1190. Construction on this project started September 19, 1966.

Contract No. 1180--For construction of Bay Division Pipeline No. 4, Section A and Alameda Creek Siphon No. 3. The contract was awarded to Vido Artukovich and Son, Inc. on August 31, 1965 at an estimated bid of $5,034,520.00 and was completed on March 9, 1967 at a cost of $5,061,925.05.

Contract No. 1190--For construction of the Crystal Springs Bypass Tunnel and appurtenant works in San Mateo County. The contract was awarded to Gates and Fox, Ball and Granite (a joint venture). On August 15, 1967 at an estimated bid of $8,616,850.00 and the date for completion is August 3, 1969. The contract cost through June 30, 1967 was $3,584,812.11.

Contract No. 1192--For construction of McLaren Park Pump Station. The contract was awarded to S. & Q. Construction Co. on April 5, 1966 at an estimated bid price of $119,387.64 and was completed on February 8, 1967 at a cost of $123,556.06.

Contract No. 1210--For San Antonio and Sunol Pumping Stations. The contract was awarded to C. Norman Peterson Company on May 10, 1966 at an estimated bid of $1,261,735.00 and the original date for completion was May 8, 1967. The contract cost through June 30, 1967 was $943,830.81.

Contract No. 1217--For resurfacing watershed roads in San Mateo County. The contract was awarded to Lowrie Paving Company, Inc. on May 10, 1966 at an estimated bid of $17,660.00 and was completed on July 15, 1966 at a cost of $17,807.93.

Contract No. 1219R--For construction of a fence around Stanford Heights Reservoir. The contract was awarded to United States Steel Corporation on July 19, 1966 at an estimated bid of $6,147.50 and was completed on October 7, 1966 at a cost of $6,072.95.

Contract No. 1240--For Construction of 60-inch San Antonio Pipeline and 36-inch Sunol Pump Pipeline. The contract was awarded to M.G.M. Construction Company on May 24, 1966 at an estimated bid of $1,017,941.25 and was completed on May 19, 1967 at a cost of $1,032,978.25.

Contract No. 1249--For installation of an elevator at 425 Mason Street Building in San Francisco. The contract was awarded to Arthur W. Baum on June 28, 1966 at an estimated bid of $79,765.00 and the original date for completion was June 10, 1967. The contract cost through June 30, 1967 was $71,144.86.

Contract No. 1250--For construction of 60-inch Crystal Springs - San Andreas pipeline. The contract was awarded to Hood Corporation on May 23, 1967 at an estimated bid of $1,830,035.95 and the date for completion is June 19, 1968. No progress payments have been mad through June 30, 1967.

Contract No. 1255--For construction of Sanitary Facilities at the Millbrae Yard in San Mateo County. The contract was awarded to H. E. Rahlmann Co. on July 5, 1966 at a lump sum bid price of $9,473.00 and was completed on October 7, 1966.

Contract No. 1260--For construction of Irrigation Systems at Merced Manor, Stanford Heights and University Mound Reservoirs. The contract was awarded to A. & J. Shooter, Inc. of Marin on September 27, 1966 at a bid price of $33,133.45 and was completed on December 29, 1966.

Contract No. 1264--To rehabilitate lining at Sutro Reservoir. The contract was awarded to Globe Linings, Inc. on February 7, 1967 at an estimated bid price of $120,420.00 and the original date for completion was June 10, 1967. The contract cost through June 30, 1967 was $72,279.54.

Contract No. 1280--For connections of Alameda Creek Siphon No. 3. The contract was awarded to M.G.M. Construction Co. on December 20, 1966 at an estimated bid price of $174,765.00 and was completed on June 21, 1967 at a cost of $177,028.34.

Contract No. 1286--For furnishing and installing a heating system at the Millbrae Corporation Yard in San Mateo County. The contract was awarded to Anderson, Rowe & Buckley, Inc. on May 31, 1967 at an estimated bid price of $11,896.50, and the date for completion is August 28, 1967. No progress payment was made through June 30, 1967.

Contract No. 1287--For reconstruction of the stilling basin at Pilarcitos Dam Spillway. The contract was awarded to Falcon Excavating Co. on May9, 1967 at an estimated bid price of $5,880.00 and the date for completion is July 11, 1967. No progress payment was made through June 30, 1967.

Contract No. 1290--For reconditioning a portion of 54-inch San Andreas Pipeline in San Mateo County. The contract was awarded to Pipe Linings, Inc. on January 24, 1967 at an estimated bid price of $33,945.00 and was completed on March 21, 1967 at a cost of $33,355.44.

Contract No. 1294--For resurfacing Ravenswood Access Road in San Mateo County. The contract was awarded to O. C. Jones & Sons on April 11, 1967 at an estimated bid price of $6,114.00 and was completed on June 8, 1967 at a cost of $6,632.05.

Contract No. 1305--For installation of an Emergency Standby Generator at the Corporation Yard. The contract was awarded to Abbett Electric Corp. on April 18, 1967 at a lump sum bid price of $13,638.00. No progress payment was made through June 30, 1967.

Contract No. 1308--For painting the exterior of the Water Department Building at 425 Mason Street in San Francisco. The contract was awarded to C. L. Disheroon Painting Co. on May 16, 1967 at a lump sum bid price of $6,843.00. No progress payment was made through June 30, 1967.

INFORMAL CONTRACTS:

Informal Contract I-159--For installation of pneumatic temperature control equipment for the Administration Building, Corporation Yard. The contract was awarded to Honeywell, Inc. On August 10, 1966 at a lump sum bid price of $1,689.00. The contract was completed April 17, 1967.

Informal Contract I-160--For furnishing and installing an aluminum flagpole and a bronze plaque at the Sunol Valley Filtration Plant in Alameda County. The contract was awarded to C. Norman Peterson Company on August 23, 1966 at a lump sum bid price of $1,575.00. The contract was completed October 11, 1966.

Informal contract I-161--For construction of service road near Pleasanton in Alameda County. The contract was awarded April 25, 1967 at an estimated bid price of $4,274.00. The Contract was completed on June 1, 1967 at a cost of $4,660.24.

LANDS, LEASES AND PERMITS

LAND TRANSACTIONS

On June 30, 1966 there were 62,960,592 acres of land owned by the Department. There were no purchases but 0.929 acres were sold during this fiscal year, leaving 62,959,663 acres owned by the Department on June 30, 1967.

Detailed purchases and sales are:

	PURCHASES (Acres)	SALES (Acres)
PURCHASES	-0-	
SALES		
Parcel 57 - Mayhew Tract - Parcel 5	—	0.929
Net Decrease in Acres		0.929

LEASES AND PERMITS

During the fiscal year 115 revocable permits were prepared and 24 were cancelled. Twenty-four leases were prepared.

The preparation of legal descriptions of real property and accompanying maps showing the boundaries and location of property to be leased, disposed of or acquired, totaled some 51 parcels this year. Revocable permits with appropriate terms and conditions, with accompanying maps, totaling 115 were prepared. There were 36 court actions in connection with condemnations and quieting of title actions for which 8 exhibits and the supporting data were prepared. All of this work mentioned above is done in the Engineering Division where extensive records of the Department's real property are maintained.

LAND AND AGRICULTURAL OPERATIONS

The Department has a continuing program of improving the properties under lease for grazing and agricultural use. The growing population adjacent to watershed land has enabled the Department to lease available land for higher value use compatible with the primary function of providing high quality water.

Sunol Valley Golf Course held a ground breaking ceremony for the new half-million-dollar clubhouse for the two courses being built on property leased from the Water Department.

The Peninsula Sportsmen's Clubhouse on property leased from the Department is nearing completion at the end of this fiscal year.

Revenue from Crystal Springs Golf Course for fiscal year 1966-67 totaled $32,610 which is $6,877 more than for the prior fiscal year, in spite of an unusually rainy winter and interruptions due to the construction of Junipero Serra Freeway. Tentative gross revenue from leases and agricultural operations for 1966-67 are estimated at $500,000.

On August 2, 1966, a contract was awarded to Development Planning Associates to make a study of the feasibility factors, utilities services, leasing methods and procedures pertaining to Pleasanton Industrial Park and to develop a master plan to serve as a guide in the future development of this property.

Contracts were maintained with the Alameda County Assessor's office again during 1966-67. The land assessments indicate a decrease of $2,900 for a total land assessment of $1,240,050; improvements assessment remained the same at a total of $2,099,700; water rights remained the same at a total of $1,800,250. The total change in these assessments is a decrease of $2,900 from the previous year.

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained strictly in accordance with the requirements of the California State Public Utilities Commission and Section 64 of the City Charter. The accounts of the Department have been so coordinated with the Controller's system that no encumbrance or expenditure against budget estimates can be incurred without prior certification from the Controller that funds are available. As provided in Ordinance 9.0621, an annual audit of the Department is made as of June 30 by a firm of certified public accountants.

Operating Expenses show a net decrease of $2,297,505.03 as shown by the following tabulation.

OPERATING REVENUE DEDUCTIONS	Increase	Decrease
Source of Supply	$ 130,480.20	$
Pumping Expenses	60,059.73	
Purification Expenses	163,876.63	
Transmission and Distributions Expenses	259,829.54	
Customers Accounts Expenses	21,974.93	
Administrative and General	252,723.88	
*Municipal Taxes, Comparison		40,103.79
Miscellaneous Expenses	7,355.65	
Taxes Actual	84,829.39	
Provision for Depreciation	61,468.81	
Standby Charge and Purchase of Water		3,300,000.00
Net Decrease	2,297,505.03	
	$3,340,103.79	$3,340,103.79

*Water delivered to Municipal Departments offset by taxes.

An analysis of Revenue and Operating Expenses is shown in the following Exhibits "A" through "E".

EXHIBIT A

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

BALANCE SHEET
JUNE 30, 1967

ASSETS AND OTHER DEBITS

UTILITY PLANT			
Water Plant in Service		$158,058,215.95	
Less: Reserve for Depreciation		48,552,554.15	$109,505,661.80
Construction Work in Progress			8,979,559.12
TOTAL UTILITY PLANT			$ 118,485,220.92
CURRENT AND ACCRUED ASSETS			
Cash		$17,923,910.51	
Accounts Receivable	$1,959,167.12		
Less: Reserve for Uncollectible Accounts	12,000.00	1,947,167.12	
Notes Receivable		1,457.81	
Interfund Accounts Receivable -		12,095.51	
Materials and Supplies		851,684.61	
Pre-Payments		5,477.02	
TOTAL CURRENT AND ACCRUED ASSETS			$20,741,792.58
DEFERRED DEBITS			
Work in Progress		$ 226,453.63	
Suspense Debits		1,765,032.98	
Other Deferred Debits		126.00	
Encumbrances (Contra)		9,410,438.40	
TOTAL DEFERRED DEBITS			$11,402,051.01
TOTAL ASSETS AND OTHER DEBITS			$150,629,064.51

LIABILITIES AND OTHER CREDITS

LONG-TERM DEBT			
Bonds			$ 38,475,277.00
CURRENT AND ACCRUED LIABILITIES			
Accounts Payable		$2,142,517.87	
Interfund Accounts Payable		356,755.95	
Matured Long-Term Debt		5,000.00	
Matured Interest		3,802.50	
Customer's Deposits		63,658.34	
Interest Accrued		90,000.00	
TOTAL CURRENT AND ACCRUED LIABILITIES			$ 2,661,734.66
DEFERRED CREDITS			
Suspense Credits		$ 28,725.05	
Advances for Construction		191,375.57	
Orders for Work - Cash Advances		92,685.10	
Orders for Work - Other Departments		42,886.49	
Orders for Work - Stock Manufacture		24,737.60	
Rental Deposits and Payments made in advance		7,925.00	
Orders for Work - Accounts Receivable		1,147,087.85	
TOTAL DEFERRED CREDITS			$1,535,422.66
RESERVE			
Reserve for Encumbrances		$ 9,410,438.40	
Injuries and Damages Reserve		75,000.00	
Reserve for Refunds			
Funded —	$ 59,584.02		
Unfunded -	106,651.51	166,235.53	
Reserve for Contractor's Damage Claims		23,030.32	
Reserve for Unpaid Revolving Fund Checks		2,256.86	
TOTAL RESERVES			$ 9,676,961.11
SURPLUS			
Surplus			$ 84,868,800.00
Surplus - 1961 Municipal Water System Bond			13,410,869.08
TOTAL LIABILITIES AND OTHER CREDITS			$150,629,064.51

EXHIBIT B

PUBLIC UTILITIES COMMISSION

SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT

TWELVE MONTHS ENDING JUNE 30, 1967

TITLE			FISCAL YEAR 1966 - 1967	FISCAL YEAR 1965 - 1966	1966-1967 INCREASE (DECREASE)	MARCH 3, 1930 TO JUNE 30, 1967
OPERATING INCOME						
Sale of Water			$20,252,548.08	$19,384,379.75	$ 868,168.33	$426,973,306.99
OPERATING REVENUE DEDUCTIONS						
Operating Expenses			9,028,129.92	8,171,933.15	856,196.77	135,028,730.83
Purchase of Water			2,500,000.00	5,800,000.00	(3,300,000.00)	89,346,061.92
Depreciation			1,979,855.40	1,918,386.59	61,468.81	43,649,736.10
Taxes - Actual			1,087,006.53	1,002,177.14	84,829.39	19,765,994.74
	TOTAL OPERATING REVENUE DEDUCTIONS		14,594,991.85	16,892,496.88	(2,297,505.03)	287,790,523.59
	UTILITY OPERATING INCOME		5,657,556.23	2,491,882.87	3,165,673.36	139,182,783.40
OTHER INCOME			1,503,474.93	1,105,314.47	398,160.46	17,026,267.97
	GROSS INCOME		7,161,031.16	3,597,197.34	3,563,833.82	156,209,051.37
INCOME DEDUCTIONS			1,044,057.32	676,196.84	367,860.48	46,845,710.06
	INCOME TRANSFERRED TO EARNED SURPLUS		$ 6,116,973.84	$ 2,921,000.50	$ 3,195,973.34	$109,363,341.31
	Rents - Including Share Crops	$451,352.75				
	Collections from Damage Claims	6,079.76				
	Interest Revenue	152,902.36				
	Walnut Orchard	22,000.00				
	House Rent	6,272.50				
	Fixed Asset Sales	323,410.06				
	Miscellaneous	541,457.50	$ 1,503,474.93			
	Non-Operating Revenue Deductions	72,019.28				
	Interest on Long-Term Debt	972,038.04	$ 1,044,057.32			

EXHIBIT C

PUBLIC UTILITIES COMMISSION

SAN FRANCISCO WATER DEPARTMENT

SURPLUS

JUNE 30, 1967

SURPLUS - JUNE 30, 1966 - S.F.W.D.	$ 80,382,994.60	
" " " " - 1961 Municipal Water System Bond	11,779,287.23	$ 92,162,281.83
ADD:		
Net Income for Twelve Months ending June 30, 1967		6,116,973.84
DEDUCT:		
Adjustment of June 30, 1966 Surplus - S.F.W.D.		4,497.00
ADD:		
Adjustment of June 30, 1966 Surplus - 1961 Municipal Water System Bond		4,910.41
SURPLUS - JUNE 30, 1967 - S.F.W.D.	84,868,800.00	
" " " " - 1961 Municipal Water System Bond	13,410,869.08	$ 98,279,669.08

EXHIBIT D

COMPOSITION OF SURPLUS - CONDENSED

JUNE 30, 1967

INITIAL SURPLUS - MARCH 3, 1930		$ 4,152,652.24		
Amortization on Contribution (Spring Valley)		100,000.00		
Valuation of Municipal Water Works		4,252,652.24		
LESS: Additional Allowance for Depreciation - March 1, 1920 to March 3, 1930		2,327,916.67	1,924,735.57	
ADDITIONS:				
Net Income - March 3, 1930 to June 30, 1967		109,363,341.31		
Miscellaneous and Year to Year Adjustments		5,267,964.18		
Contributions from Hetch Hetchy Power Division		409,471.41		
Contributions from 1947 Hetch Hetchy Water Bond Fund		290,516.71	115,331,293.61	
Grants Earned on Federal Public Works Project			2,358,987.60	
Year to Year - Addition to Surplus - June 30, 1967			1,669,481.49	121,284,498.27
DEDUCTIONS:				
Contributed to General Fund			15,922,457.24	
Contributed to Hetch Hetchy Water Supply			4,466,014.40	
Lands contributed to City and County of San Francisco For Streets and Boulevards			172,564.67	
Excess of adjusted book value of plant appraisal, December 31, 1937	$1,990,474.91			
Excess of adjusted book value of plant appraisal, June 30, 1953	188,291.42	2,178,766.33		
LESS: Adjusted book value of plant appraisal, June 30, 1948		83,864.03		
ADD: Adjusted book value of plant appraisal, June 30, 1963		89,383.93		
" " " " " " June 30, 1958		91,365.18		
LESS: Adjustment of June 30, 1966 Surplus - S.F.W.D.	4,497.00			
ADD: Adjustment of June 30, 1966 Surplus - 1961 Municipal Water System Bond	4,910.41	413.41	2,443,792.88	23,004,829.19
SURPLUS - JUNE 30, 1967				$ 98,279,669.08

EXHIBIT E

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT

JUNE 30, 1967

TITLE	FISCAL YEAR 1966 - 1967	FISCAL YEAR 1965 - 1966	1966 - 1967 INCREASE - (DECREASE)	MARCH 3, 1930 to JUNE 30, 1967
OPERATING INCOME				
Sale of Water				
Water Sales - San Francisco	$10,219,218.67	$ 9,876,329.33	$342,889.34	
" " - Outside San Francisco	8,757,407.53	8,194,924.89	562,482.64	
" " - Municipal Departments - Actual	90,602.16	87,702.02	2,900.14	
" " - " " - Comparison	1,185,319.72	1,225,423.51	(40,103.79)	
TOTAL WATER SALES	$20,252,548.08	$19,384,379.75	$ 868,168.33	$426,973,300.99
OPERATING REVENUE DEDUCTIONS				
Source of Supply				
Operation, Supervision and Engineering	70,742.43	65,723.32	5,019.11	
Operation, Labor and Expense	725,542.55	568,913.98	156,628.57	
Miscellaneous Expenses	957.59	1,452.37	(494.78)	
Maintenance, Supervision and Engineering	327.73	9,774.36	(9,446.63)	
" of Structures and Improvements	195,044.80	236,706.94	(41,662.14)	
" " Collecting and Impounding Reservoirs	126,693.45	100,401.61	26,291.84	
" " Lake, River and Other Intakes	362.80	406.85	(44.05)	
" " Springs and Tunnels	- 0 -	446.25	(446.25)	
" " Wells	1,169.25	527.28	641.97	
" " Supply Mains	76,652.05	72,752.62	2,899.43	
" " Other Source of Supply Plant	4,998.05	13,904.92	(8,906.87)	
TOTAL SOURCE OF SUPPLY EXPENSES	$1,201,490.70	$1,071,010.50	$130,480.20	16,272,462.03
Pumping Expenses				
Pumping Labor and Expenses	103,013.96	91,531.35	11,482.61	
Miscellaneous Supplies and Expense	255.36	1,041.52	(786.16)	
Fuel or Power Purchased for Pumping	291,244.84	261,828.30	29,416.54	
Maintenance, Supervision and Engineering	- 0 -	- 0 -		
" of Structures and Improvements	18,841.46	8,241.01	10,600.45	
" " Primary Pumping Equipment	2,569.08	3,813.67	(1,244.59)	
" " Pumping Equipment	35,822.97	26,552.92	9,270.05	
Gardening	3,118.01	1,797.18	1,320.83	
TOTAL PUMPING EXPENSES	$454,865.68	$394,805.95	$60,059.73	11,741,198.01
Purification Expense Accounts				
Operation, Supervision and Engineering	92,874.06	70,847.55	22,026.51	
" Labor and Expenses	256,788.84	192,205.23	64,583.61	
Miscellaneous Expenses	406.81	129.95	276.86	
Supplies and Expenses	291,541.93	220,480.92	71,061.01	
Maintenance, Supervision and Engineering	309.12	1,287.94	(978.82)	
" of Structures and Improvements	8,746.37	6,163.00	2,583.37	
" " Water Treatment Equipment	5,539.48	1,215.39	4,324.09	
TOTAL PURIFICATION EXPENSES	$656,206.61	$492,329.98	$163,876.63	6,107,846.64

EXHIBIT E (Cont'd.)

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT
JUNE 30, 1967

TITLE	FISCAL YEAR 1966 - 1967	FISCAL YEAR 1965 - 1966	1966 - 1967 INCREASE (DECREASE)	MARCH 3, 1930 TO JUNE 30, 1967
OPERATING REVENUE DEDUCTIONS (Cont'd.)				
Transmission and Distribution Accounts				
Operation, Supervision, and Engineering	$ 169,799.49	$ 167,425.32	$ 2,374.17	
Storage Facilities Expenses	13,139.71	14,474.97	(1,335.26)	
Transmission and Distribution Lines Expenses	210,524.05	229,201.37	(18,677.32)	
Meter Expenses	282,812.02	245,360.12	37,451.90	
Customer Installation Expenses	345,403.62	315,223.44	30,180.18	
Miscellaneous	12,113.74	11,786.72	327.02	
Operating Expenses - City Yard	204,238.67	190,589.42	13,649.25	
Maintenance, Supervision, and Engineering	4,890.90	4,771.49	119.41	
" of Structures and Improvements	89,499.10	84,352.99	5,146.11	
" " Reservoirs and Tanks	10,695.82	19,273.28	(8,577.46)	
" " Transmission Lines and Canals	40,400.75	56,075.25	(15,674.50)	
" " Services	655,274.67	542,699.45	112,575.22	
	-0-	26.00	(26.00)	
Maintenance of Miscellaneous Plant	27,885.22	26,139.58	1,745.64	
" " Distribution Mains, Canals, etc.	752,405.93	651,854.75	100,551.18	
TOTAL TRANSMISSION AND DISTRIBUTION ACCOUNTS	$2,819,083.69	$2,559,254.15	$259,829.54	$32,952,162.74
Customers' Accounts Expenses				
Meter Reading Expenses	$ 111,958.94	$ 109,978.65	$ 1,980.29	
Customer Records and Collection Expenses	167,652.08	147,413.16	20,238.92	
Miscellaneous Customer Accounts Expenses	206,169.39	163,123.11	43,046.28	
Inspection and Service	146,108.46	132,992.69	13,115.77	
Bookkeeping Department	140,772.07	198,427.19	(57,655.12)	
Shipping	30,320.11	29,071.32	1,248.79	
TOTAL CUSTOMERS' ACCOUNTS EXPENSES	$ 802,981.05	$ 781,006.12	$ 21,974.93	$19,708,154.77
Administrative and General				
Salaries - General Officers	$ 48,456.09	$ 33,285.02	$ 15,171.07	
" - " Office	132,655.54	127,752.10	4,903.44	
General Engineering	291,009.83	220,684.42	70,325.41	
Resources and Planning	42,188.75	34,546.79	7,641.96	
Office Supplies and Other Expenses	31,205.05	36,355.34	(5,150.29)	
Telephone Service	67,396.09	55,662.78	11,733.31	
Mason Street Operating Expense	83,923.01	132,318.67	(48,395.66)	
Municipal Taxes - Comparison	1,185,319.72	1,225,423.51	(40,103.79)	
Outside Services Employed	20.00	-0-	20.00	
Insurance - Compensation	64,997.75	116,037.58	(51,039.83)	
" - Other	12,290.42	10,372.88	1,917.54	
Injuries and Damages	23,607.94	40,208.47	(16,600.53)	
Pensions	298,592.55	191,956.30	106,636.25	
Social Security	159,426.92	117,060.50	42,366.42	
Hydrography	2,650.00	1,373.58	1,276.42	
Electronic Data Processing	252,526.64	173,739.19	78,787.45	
Public Utilities Commission	144,295.92	129,813.18	14,482.74	
Maintenance to Telephone System	27,144.54	39,272.46	(12,127.92)	
" " Mason Street Building	29,989.40	8,801.39	21,188.01	
" " Radio System	3,354.07	3,363.60	(9.53)	
Inventory Expense - Maintenance	5,009.67	(12,348.13)	7,338.46	
Maintenance of Non-Operative Property	4,137.67	2,468.97	1,668.70	
Miscellaneous Maintenance	158,981.19	158,390.73	590.46	
TOTAL ADMINISTRATIVE AND GENERAL	$3,059,159.42	$2,846,539.33	$212,620.09	$47,219,911.70

EXHIBIT E (Cont'd.)

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT
JUNE 30, 1967

TITLE	FISCAL YEAR 1966 - 1967	FISCAL YEAR 1965 - 1966	1966 - 1967 INCREASE - (DECREASE)	MARCH 3, 1930 to JUNE 30, 1967
OPERATING REVENUE DEDUCTIONS (Cont'd.)				
Miscellaneous Expenses				
Uncollectible Water Bills	$ 20,330.55	$ 16,564.47	$ 3,766.08	
Provision for Contingent Funds	14,012.22	10,422.65	3,589.57	
TOTAL MISCELLANEOUS EXPENSES	$ 34,342.77	$ 26,987.12	$ 7,355.65	$ 1,026,994.94
TOTAL OPERATING REVENUE DEDUCTIONS	$9,028,129.92	$8,171,933.15	$ 856,196.77	$135,028,730.83
OPERATING EXPENSES				
Purchase of Water	$2,500,000.00	$5,800,000.00	(3,300,000.00)	
Depreciation	1,979,855.40	1,918,386.59	61,468.81	
Taxes - Actual	1,087,006.53	1,002,177.14	84,829.39	
TOTAL OPERATING EXPENSES	$5,566,861.93	$8,720,563.73	$(3,153,701.80)	$152,761,792.76
UTILITY OPERATING INCOME	$5,657,556.23	$2,491,882.87	$ 3,165,673.36	$139,182,783.40
OTHER INCOME				
Rentals, including Crop Shares	$ 451,352.75	$ 444,511.63	$ 6,841.12	
Walnut Orchard Sales	22,000.00	23,016.96	(1,016.96)	
Miscellaneous	553,809.76	460,152.02	93,657.74	
Interest Earned	152,902.36	130,158.40	22,743.96	
Sales of Real Estate and Fixed Assets	323,410.06	47,475.46	275,934.60	
TOTAL OTHER INCOME	$1,503,474.93	$1,105,314.47	$ 398,160.46	$ 17,026,267.97
GROSS INCOME	$7,161,031.16	$3,597,197.34	$ 3,563,833.82	$156,209,051.37
INCOME DEDUCTION				
Agricultural Division	$ 72,019.28	$ 32,105.97	$ 39,913.31	
Walnut Orchard Expense		8,927.41	(8,927.41)	
Miscellaneous Expense		27,681.60	(27,681.60)	
Interest on Long-Term Debt	972,038.04	607,481.86	364,556.18	
TOTAL INCOME DEDUCTIONS	$1,044,057.32	$ 676,196.84	$ 367,860.48	$ 46,845,710.06
NET INCOME TRANSFERRED TO SURPLUS	$6,116,973.84	$2,921,000.50	$ 3,195,973.34	$109,363,341.31

BOND REDEMPTION AND INTEREST

WATER DEPARTMENT

	Redemption				Interest				Total Redemption plus Interest
	Spring Valley 1928	H.H. Water Service 1947	Muni Water System 1961	Total	Spring Valley 1928	H.H. Water Service 1947	Muni Water System 1961	Total	
1966-67	$1,000,000	$ 132,682	$ 798,840	$ 1,931,522	$180,000	$15,175	$ 909,440	$ 1,104,615	$ 3,036,137
1967-68	1,000,000	132,682	1,546,253	2,678,935	135,000	7,994	1,111,623	1,254,617	3,933,552
1968-69	1,000,000	91,882	1,546,253	2,638,135	90,000	814	1,060,538	1,151,352	3,789,487
1969-70	1,000,000		1,546,253	2,546,253	45,000		1,010,053	1,055,053	3,601,306
1970-71			1,594,251	1,594,251			960,079	960,079	2,554,330
1971-72			1,755,393	1,755,393			907,845	907,845	2,663,238
1972-73			2,098,242	2,098,242			841,701	841,701	2,939,943
1973-74			2,098,244	2,098,244			766,373	766,373	2,864,617
1974-75			2,098,241	2,098,241			690,586	690,586	2,788,827
1975-76			2,098,242	2,098,242			614,687	614,687	2,712,929
1976-77			2,101,669	2,101,669			544,129	544,129	2,645,798
1977-78			2,101,670	2,101,670			477,299	477,299	2,578,969
1978-79			2,098,241	2,098,241			410,468	410,468	2,508,709
1979-80			2,098,242	2,098,242			343,741	343,741	2,441,983
1980-81			2,098,241	2,098,241			277,015	277,015	2,375,256
1981-82			2,098,243	2,098,243			210,287	210,287	2,308,530
1982-83			1,858,247	1,858,247			143,560	143,560	2,001,807
1983-84			966,837	966,837			84,084	84,084	1,050,921
1984-85			966,838	966,838			50,257	50,257	1,017,095
1985-86			881,125	881,125			17,717	17,717	898,842
1986-87			599,988	599,988			750	750	600,738
TOTAL DUE AFTER 6-30-66	$4,000,000	$357,246	$35,049,553	$39,406,799	$450,000	$23,983	$11,432,232	$11,906,215	$51,313,014

ORIGINAL AMOUNTS AND INTEREST RATES

$41,000,000	$12,500,000	$36,712,376	$89,212,376	4¼%	1¼ to 6%	2¼ to 6%

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FOR
APPENDIX TO
REPORT OF SAN FRANCISCO WATER DEPARTMENT

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TABLE NO. 1

METERS - NUMBER AND SIZE IN SERVICE
SAN FRANCISCO DISTRICT AS OF JUNE 30, 1967

CLASS OF CONSUMERS:	5/8"	3/4"	1"	1½"	2"	3"	4"	6"	8"	10"	12"	TOTAL
Revenue Producing												
Commercial	16,483	1,480	3,668	3,180	5,328	108	368	520	425	1	1	31,562
Residential	119,050	6,035	2,023	310	21	-	-	-	-	-	-	127,439
Docks & Ship	121	12	29	53	129	-	2	2	8	-	2	358
TOTAL	135,654	7,527	5,720	3,543	5,478	108	370	522	433	1	3	159,359
Non-Producing												
Commercial	1,204	33	96	61	47	7	16	17	4	-	-	1,485
Residential	1,279	63	8	2	-	-	-	-	-	-	-	1,352
Docks & Ship	5	-	2	-	-	-	-	-	-	-	-	7
TOTAL	2,488	96	106	63	47	7	16	17	4	-	-	2,844
TOTALS:												
Commercial	17,687	1,513	3,764	3,241	5,375	115	384	537	429	1	1	33,047
Residential	120,329	6,098	2,031	312	21	-	-	-	-	-	-	128,791
Docks & Ship	126	12	31	53	129	-	2	2	8	-	2	365
TOTAL	138,142	7,623	5,826	3,605	5,525	115	386	539	437	1	3	162,203

Total meters in service as of June 30, 1967		162,203
Less: Extra meters in 1,241 Batteries - (3,736 meters - 1,241)	2,495	
Extra meters in 24 Consolidations (74 meters - 24)	50	
Non-Revenue meters (temporarily shut off)	2,844	5,389
Number of Active Accounts as of June 30, 1967		156,814

NOTE: The above meter count includes 1,829 Fire Services. At dock and Shipping Office, portable meters used on hydrants as needed (not included above) 25 - 1½" & 28-2" meters. At Union Plant of Bethlehem Shipbuilding Corp. 8 - 1½" meters.

PREVIOUS RECORDS	1962-63	1963-64	1964-65	1965-66	1966-67
Total Meters	160,317	160,821	161,286	162,121	162,203

TABLE 2
METERS - NUMBER AND SIZE IN SERVICE
SUBURBAN DISTRICT AS OF JUNE 30, 1967

CLASS OF CONSUMERS:	5/8"	3/4"	1"	1½"	2"	4"	6"	8"	10"	12"	16"	TOTAL
Revenue Producing												
Regular Rates	406	36	36	21	126	22	82	83	17	4	7	840
Airport Use	8	6	17	11	31	2	4	13	3	1	0	96
TOTAL	414	42	53	32	157	24	86	96	20	5	7	936
Non-Revenue Producing												
Regular Rates	5	-	-	-	3	-	1	4	6	-	-	19
Airport Use	-	-	-	-	1	-	-	-	-	1	-	2
TOTAL	5	-	-	-	4	-	1	4	6	1	-	21
TOTALS												
Regular Rates	411	36	36	21	129	22	83	87	23	5	7	860
Airport Use	8	6	17	11	32	2	4	13	3	1	0	97
TOTAL	419	42	53	32	161	24	87	100	26	6	7	957

Total:	Meters in service as of June 30, 1967		957
Less:	Extra meters in 85 Batteries and Consolidations * (365 meters - 85)	280	
	Non-Revenue meters (temporarily shut off)	21	301
	Number of Active Suburban Accounts as of June 30, 1967		656

NOTE: The above meter count includes 13 Automatic Sprinklers for fire purposes

PREVIOUS RECORDS:	1962-63	1963-64	1964-65	1965-66	1966-67
Total Meters	963	938	951	955	957
= Increase; Decrease-	-29	-25	13	4	2
Idle Meters	13	7	10	6	21

TABLE NO. 3

STREET MAIN TAPS AND SERVICE CONNECTIONS RECORD

San Francisco District June 30, 1967

TAPS ON STREET MAINS

	Wharf	3/4"	1"	1½"	2"	3"	4"	6"	8"	10"	12"	16"	TOTALS
June 30, 1966	375	154,428	22,098	5,415	3,740	1,135	827	723	487	1	20	2	189,251
ADD 1966-67	-	-3,626	4,275	135	113	55	45	30	16	1	2	-	1,046
June 30, 1967	375	150,802	26,373	5,550	3,853	1,190	872	753	503	2	22	2	190,297

SERVICE CONNECTIONS

ADD Services connected to street mains, as above	190,297
"Distributors", being 1 or more addional meter conn. to service pipes	4,579
TOTAL connections of record	194,876
Disconnected services	35,218
Net metered live services consisting of 159,359 active meters; less 2,545 extra meters in batteries, plus 2,844 services temporarily shut off	159,658

Previous Records:	1963-64	1964-65	1965-66
Active	158,695	158,544	159,169
Shutoff	2,126	2,742	2,952
TOTALS	160,821	161,286	162,121
Less extra battery meters	2,170	2,257	2,362
NET	158,651	159,029	159,759

SERVICE INSTALLATIONS ORDERED

Fiscal Year 1966-67

DISTRICT:	Taps	Distributors	TOTALS
Richmond District	25	0	25
Sunset	146	0	146
North Market & Western Add'n	291	0	291
South Market & Twin Peaks	310	0	310
Waterfront	0	0	0
TOTALS	772	0	772

Previous Years	Taps	Distributors	TOTALS
1963-64	1,189	0	1,189
1964-65	1,136	0	1,136
1965-66	1,085	2	1,087

TABLE NO. 4

LENGTH OF VARIOUS SIZES OF TRANSMISSION MAINS IN FEET

	16"	24"	28"	30"	33"	36"	37"	39"	42"	44"	48"	54"	57"
Alameda	395s					122,934							
Pleasanton				27,432									
Niles-Irvington										15,600			
Calaveras										30,570	1,045		
Bay Div'n #1									3,161s				6,821
" " #2									250r			6,066s	
" " #3													
Alameda Cr.Siphon													
C. S. #1		238								84,943		358	
C. S. #2				669					100			16,757	
Sunset & C.S. #3													
Sunset Pipeline												337	
San Andreas Br.of Sunset Pipeline													
San Andreas #1		31				2,334			3,150	21,103			
San Andreas #2												64,722	
Baden-Merced				32,258		2,260	1,560						
San Andreas Outlet Conn. Pipes				5,024								869	
Palo Alto						28,049							
Pilarcitos Aqued.			7,480		169	648				730			
Stone Dam "				501				1,814		2,106	2,894		
C.S. - S.A. "										30	916	492	
San Antonio												110	
Sunol Pump				170		7,697							
TOTAL	395	269	7,480	66,054	169	163,922	1,560	1,814	6,661	155,082	4,855	89,711	6,821

(continued)

s - submarine pipes
r - risers

TABLE NO. 4

LENGTH OF VARIOUS SIZES OF TRANSMISSION MAINS IN FEET (Cont'd)

	60"	61"	62"	66"	69"	72"	76"	78"	79"	80"	86"	90"	91"	96"	Total Feet	Miles
Alameda															123,329	23.36
Pleasanton															27,432	5.19
Niles-Irvington															15,600	2.95
Calaveras															31,615	5.99
Bay Div'n #1	102,131														112,113	21.23
" " #2			26,094	78,856			3,867								115,133	21.81
" " #3						127,103 5,725*		43,184 1,908*				917 271*			179,108	33.92
" " #4						672				147	365	90,469		44,972	136,625	25.88
Alameda Cr. Siphon					2,942	93						2,972		2,941	8,948	1.70
C. S. #1	4,948														90,487	17.14
C. S. #2	84,317							716							102,559	19.42
Sunset & C. S. #3	255							145	14,491 120*				5,192 119*		20,322	3.85
Sunset Pipeline	45,923 105*	37,885 67*													84,317	15.97
San Andreas Br.of Sunset Pipeline	41	5,907 71*													6,019	1.14
San Andreas #1															26,618	5.04
" " #2															64,722	12.26
Baden-Merced															36,078	6.83
San Andreas Out-Let Conn.pipes	1,739	873				1,276									9,781	1.85
Palo Alto															28,049	5.31
Pilarcitos Aqued.															9,027	1.71
Stone Dam "															7,315	1.39
C.S. - S. A. "				356		820									2,614	.50
San Antonio	10,940														11,050	2.09
Sunol Pump															7,867	1.49
Sunol Plant To Siphon								8,512							8,512	1.61
TOTAL	250,399	44,803	26,094	79,212	2,942	135,689	3,867	54,465	14,611	147	365	94,629	5,311	47,913	1,265,240	239.63

*Tapers, Valves, Meters and Specials

TABLE NO. 5

PIPE RECORDS
CITY DISTRIBUTION SYSTEM

WROUGHT IRON, DUCTILE IRON AND STEEL PIPE

Size	Total Pipe in Ground June 30, 1966	Pipe Laid 1966-67	Removed or Abandoned 1966-67	Total Pipe in Ground June 30, 1967
0-3/4"	11,887	0	0	11,887
1	32,426	0	335	32,091
1-1/4	3,728	0	0	3,728
1-1/2	128,836	0	2,030	126,806
2	142,908	2,562	12,286	133,184
3	5,224	1,200	1,200	5,224
4	3,886	436	0	4,322
5	804	0	0	804
6	3,960	1,451	0	5,411
6-5/8 O.D.	680	0	0	680
8	628	4,300	0	4,928
8-5/8 O.D.	937	1,332	0	2,269
12	6,930	1,301	0	8,231
13	678	0	0	678
16	19,789	435	0	20,224
18-5/8 O.D.	1,829	106	0	1,935
20	75,919	0	0	75,919
22	25,309	0	0	25,309
23-1/2	2,037	0	0	2,037
24	57,545	0	0	57,545
30	44,227	0	0	44,227
33	2,409	0	0	2,409
36	56,596	0	0	56,596
37-1/2	8,896	0	0	8,896
44	22,261	240	0	22,501
48	12,060	358	0	12,418
60	26,216	0	0	26,216
TOTAL W.I.,D.I.&S.	698,605	13,721	15,851	696,475

TRANSITE PIPE

Size	Total Pipe in Ground June 30, 1966	Pipe Laid 1966-67	Removed or Abandoned 1966-67	Total Pipe in Ground June 30, 1967
6"	17,049	0	30	17,019
8"	24,649	0	0	24,649
TOTAL TRANSITE	41,798	0	30	41,668

TABLE NO. 5
(cont'd)

CAST IRON PIPE

Size	Total Pipe in Ground June 30, 1966	Pipe Laid 1966-67	Removed or Abandoned 1966-67	Total Pipe in Ground June 30, 1967
2"	26,311	811	778	26,344
3	52,718	0	0	52,718
4	505,549	1,618	3,435	503,732
6	2,007,200	16,264	2,253	2,021,211
8	1,717,011	4,277	1,935	1,719,351
10	5,046	0	0	5,046
12	575,617	1,046	1,303	575,360
16	337,820	811	94	338,537
20	22,592	0	0	22,592
22	19,058	0	0	19,058
24	60,256	0	0	60,256
30	4,397	0	0	4,397
TOTAL C.I.	5,333,575	24,827	9,798	5,348,604
TOTAL ALL	6,073,878	38,548	25,679	6,086,747
MILES	1,150.355	7.301	4.836	1,152.793

TABLE NO. 6

VALVE RECORDS

June 30, 1967

CITY DISTRIBUTION SYSTEM

Gates		Service Gates		Blow-Offs		Air Valves		Check Valves		Stop Cocks	
2"	116	3"	580	0-3/4	9	0-3/4"	421	1-1/2"	7	0-5/8"	18
3	197	4	1,119	1	41	1	285	2	10	0-3/4	134
4	1,392	6	714	1-1/2	242	1-1/2	538	3	1	1	193
6	5,056	8	461	2	894	2	357	4	13	1-1/2	893
8	4,484	12	22	3	235	3	5	6	37	2	2,218
10	5			4	691	4	0	8	28		
12	1,035			6	268	6	12	12	4		
16	531			8	135	8	303	16	2		
20	32			12	19						
22	20			16	3						
24	66										
30	23										
36	20										
37-1/2	2										
42	3										
48	1										
	12,985		2,896		2,537		1,920		102		3,456

SUBURBAN SYSTEM
GATES

0-3/4"	10	2"	214	8"	509	16"	57	24"	18	44"	4
1	38	3	30	10	48	18	14	30	21	48	15
1-1/4	3	4	238	12	145	20	19	36	21	54	6
1-1/2	15	6	542	14	1	22	2	42	19		
								TOTAL			1,989

Butterfly Valves	Sluice Gates	Air Relief & Vacuum Valves	Check Valves	Stop Cock	Plug Valves	Globe Valves	Pressure Regulating & Relief Valves	Misc.
8	26	1,016	249	1,710	130	16	7	28

GRANT TOTAL 5,179

ORGANIZATION AND PERSONNEL

EXECUTIVE

Arthur H. Frye, Jr.	General Manager and Chief Engineer
H. C. Medbery	Assistant General Manager and Assistant Chief Engineer
K. R. Boyd	Assistant General Manager Administrative

RESOURCES & PLANNING

R. D. Keeley	Senior Civil Engineer

ENGINEERING DIVISION

J. L. Bardoff	Principal Engineer
P. T. Matsumura	Senior Civil Engineer
D. P. Cooper	Senior Civil Engineer

CITY DISTRIBUTION DIVISION

J. E. Kenck	Manager
E. Kelleher	Assistant Manager

SHOPS DIVISION

F. Baggetta	Superintendent

PENINSULA DIVISION

J. E. O'Marie	Manager
R. L. Borame	Assistant Manager

ALAMEDA DIVISION

C. L. Hughes	Manager
G. Caccio	Assistant Manager

WATER PURIFICATION DIVISION

H. W. Tracy	Manager

COMMERCIAL DIVISION

J. J. Lyons	(Retired June 30, 1967)	Manager
J. W. Cooper		Assistant Manager

AGRICULTURAL AND LAND DIVISION

J. g. Brucato	Manager

ACCOUNTING DIVISION

V. H. Wilson	Chief Accountant
A. A. Lenzio	Head Accountant

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RETIRED

July 1, 1966 through June 30, 1967

During this fiscal year, the following employees were retired from service and recognition is given to their faithful service in the organization:

Employee	Classification	Years of Service
Anker, Joe L.	Construction Inspector	8
Baird, Charles F.	Sr. Water Services Clerk	12
Dempsey, Mary L.	Billing Pre-Auditor	19
Fawcett, Fred R.	Watershed Keeper Supervisor	40
Femons, Henry E.	Lineman	35
Foley, Coleman B.	Utility Foreman	16
Hanson, Carl	District Water Serviceman	31
Hook, William H.	Operating Engineer	28
Kane, Eneas	Utility Plumber	25
Maniscalso, Paul	General Laborer	20
McCormick, George F.	Sr. Water Services Clerk	36
McGrew, Walter	Utility Foreman	33
Menichetti, Omero	Utility Plumber Helper	20
St. John, Eleanor N.	Civil Draftsman	18
Twomey, James	Utility Plumber Helper	22

IN MEMORIAM

Foudy, James I.	March 27, 1967	32
Vasconcellos, Arnold J.	September 19, 1966	12